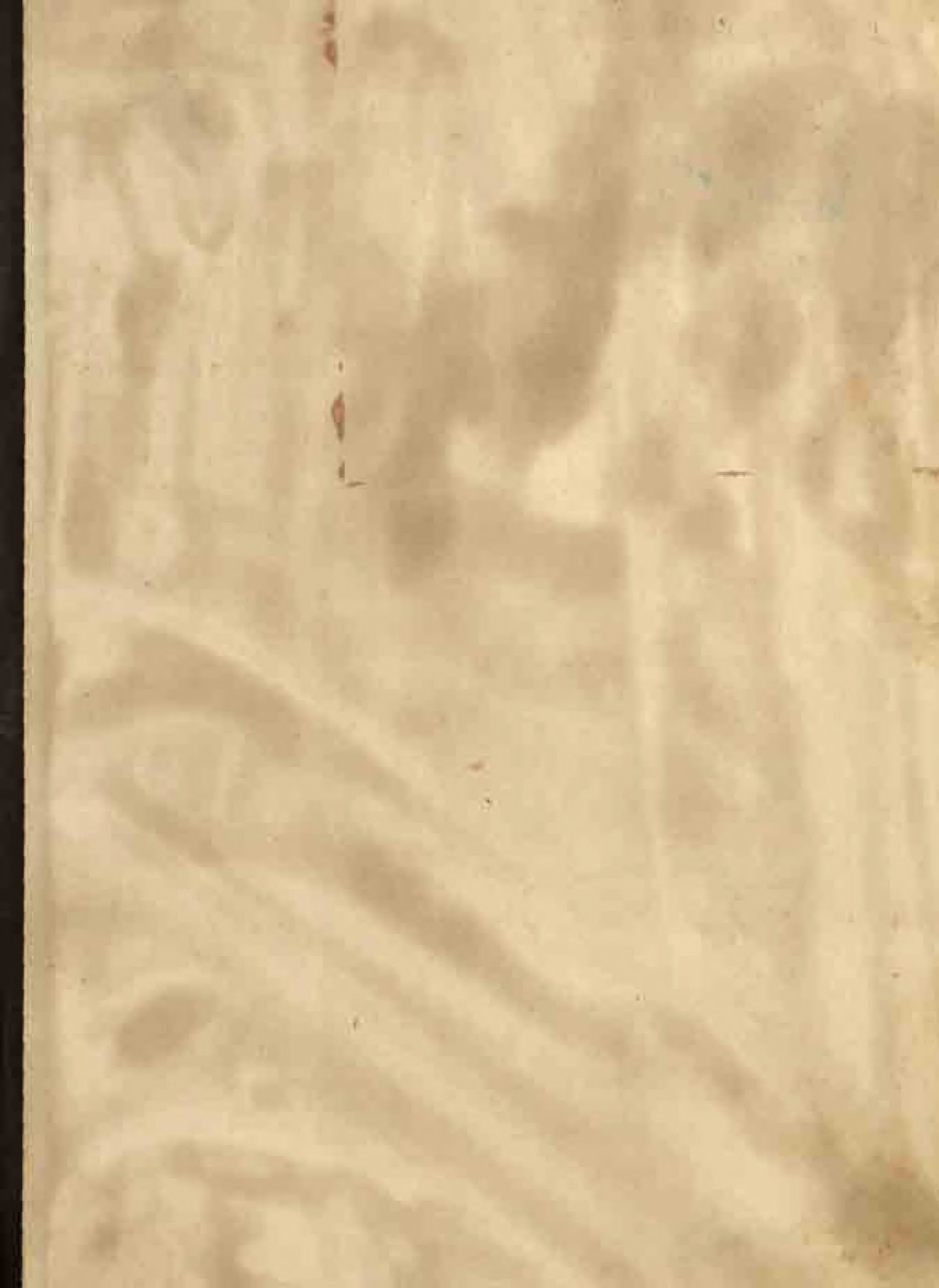


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A Quarterly Review of Archaeology



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THE UNDERGROUND VILLAGE OF MATMATA, SOUTHERN TUNISIA, SHOWING 'BEAR-PITS'
FR. G. KING MONTY

Antiquity

A Quarterly Review of Archaeology

VOL. V No. 17

MARCH 1931

Editorial Notes

ONE sometimes wonders whether these first few pages may not often be thought dull. It is not always easy to avoid preaching a sermon, but there are times—and the present is one of them—when there is no such temptation. The inexorable moment arrives when copy must be provided for the printer and it finds us in an oasis of southern Tunisia, in the land of the troglodytes. It is an almost rainless region with an ideal winter climate, and is little frequented by tourists, though the blight of the C.G.T. has to some extent affected it. When Bruun came here in 1893, the tourist was quite unknown, and the natives unspoilt. Railways and motor-roads have altered this, but one has only to go away a few miles from the track to shake off the less attractive results of 'western' influence.



The troglodytes live in the Matmata hills, whose chief 'town' is 27 miles south of Gabes, in that angle of the coast where it turns from south to east. The hills are reached by car from Gabes, along a rough but serviceable road. The first sight of the 'town' of Matmata is a very strange one, for one sees no houses! The people live underground like rabbits, in rooms excavated in the rubbly soil and opening out on to a central courtyard like a bear-pit. Entrance is by a narrow passage,

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with side-chambers for stabling donkeys and camels and for storage of fuel. There are openings all round the bear-pit, each closed with a wooden door. These are the living rooms—long barrel-vaulted excavations, exactly similar to the Bronze Age burial-caves of Majorca.* There are shelves along each side for storage-jars and occasionally for beds, and across the end is another shelf for smaller jars. Shallow cup-shaped depressions are made in the earthen shelving for the pots to stand in. At the end is a kind of 'dresser', like those which used to be so common in English cottages, and on it are the flotsam and jetsam of western civilization—empty wine bottles, old mirrors, empty picture frames, lids of biscuit tins—together with the finer products of native culture such as glazed plates. Facing the entrance is the loom, on which a burnous is being woven; beyond it is the bed, a structure of baked clay raised some three feet above the ground on clay legs.

Each bear-pit has several living rooms, with at least one kitchen, and a fowl-house. Each of the rooms has a bathroom consisting of a tiny side chamber with a bucket-shaped pit for the water. The camel, donkey, and watch-dog live side by side with the rest of the establishment, and the usual smaller parasites live in even closer association with everyone.

Now it is obvious that the unit is the single cave-room, and that the group of rooms opening on a bear-pit is a later development. It is equally obvious that this artificial cave has evolved from the natural cave. The existing structures are mostly of modern date, the oldest we saw being alleged to be 220 years old; but they are all constructed on a definite, traditional plan of great antiquity. May it not be that there is preserved in these remote hills a direct link with the cave-dwellers of palaeolithic times? Tunisia was the home of the Capsian industry, and Matmata is only 100 miles from Gafsa.

Such dwellings are only possible in regions of soft compact earth. Elsewhere in the district the cave has petrified into stone. All over the plains of the Medenine region are scattered shepherds' huts with

* See W. J. Hemp, 'Rock-cut tombs and Habitation-caves in Mallorca', *Archæologia*, 1927, LXXVI, 121-60.

EDITORIAL NOTES

barrel-vaulted roofs, clearly modelled on the cave-room. Occasionally the hut is round and the roof dome-shaped, recalling perhaps the side-chambers of the cave. Medenine itself is a granary and market town which consists wholly of barrel-vaults placed one above the other, sometimes four stories high. They are again placed round a central square or courtyard, and the whole town consists of groups of such courtyards, the equivalent of the bear-pits. Even the modern town of Houmt Souk on the island of Djerba is built on this plan, though many of the houses themselves are of more normal type.

❧ ❧ ❧

To one who has studied both it is obvious that there must be a close connexion between the caves of Majorca and those of Matmata. The Majorcan burial-caves are modelled on artificial habitation-caves, so that the antiquity of the plan goes back at least 3000 years, and may be far older. Is it not probable that the long-chambered tombs of the Mediterranean and of northwest Europe have a similar ancestry?—that the *navetas* of Minorca, the giants' tombs of Sardinia, the grottes of southern France and of the Marne, the *allées couvertes* and long barrows of Spain, Brittany and Britain are but translations into stone of a primitive cave-house?—and that the tholos-tombs of the Aegean and of Crete, and the round-chambered tombs of the West (from Gavr Inis, La Houge Bie, New Grange, and Maes Howe to the humbler structures of Cornwall and the Isles of Scilly) are similarly descended from the domed hut, which may in its turn be modelled on the less common round cave?

❧ ❧ ❧

Is it not also probable that the megalithic temples (if such they be) of Malta—Hajar Kim, Mnajdra and Hal Tarxien—are but stone bear-pits? That they were built by a people who migrated thither from some North African region where the bear-pit type of house was usual? (Malta is only 280 miles from Matmata). The essence of the plan is the same in both.

❧ ❧ ❧

We hope later on to expand these ideas into an article. What is required is for someone to make an intensive survey of the whole range of hills, for Matmata is merely a single village of a large group extending southeastwards into Tripoli. What is most needed is a series of

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accurate plans of a few bear-pits. In the time at our disposal we could make only rough sketch-plans. To do more would require adequate preparation (the inhabitants are not always too friendly though they can usually be appeased in the time-honoured fashion). There could be no better subject for an anthropological student.



With the present number we begin our fifth year. We do so with no small satisfaction, for we feel that Number 17 at least maintains, if indeed it does not surpass, the standard achieved hitherto. It is no light task to keep afloat a journal devoted to pure science during a period of unparalleled industrial depression; and we are profoundly grateful to our supporters, who alone enable us to carry on. We would remind them yet once more that our 'margin of safety' is a narrow one, and that each subscription counts. The present year must necessarily be an anxious one, but we confidently look for a continuation of the support we have received during the past four years. The circulation of a journal like ANTIQUITY can only be maintained by continual effort; the Editors do not spare themselves, and they like to think that their work is appreciated. (One practical form of expressing appreciation is indicated below).

The SUBSCRIPTION to ANTIQUITY for 1931 is now DUE. We would remind our Subscribers of the form and envelope inserted in the December number and we shall be glad to have an early response. Many have been kind enough to send their cheques in advance and a large number pay by orders on their banks. This is much appreciated and *we hope that the remainder will save us avoidable trouble in having to send direct reminders to them.*

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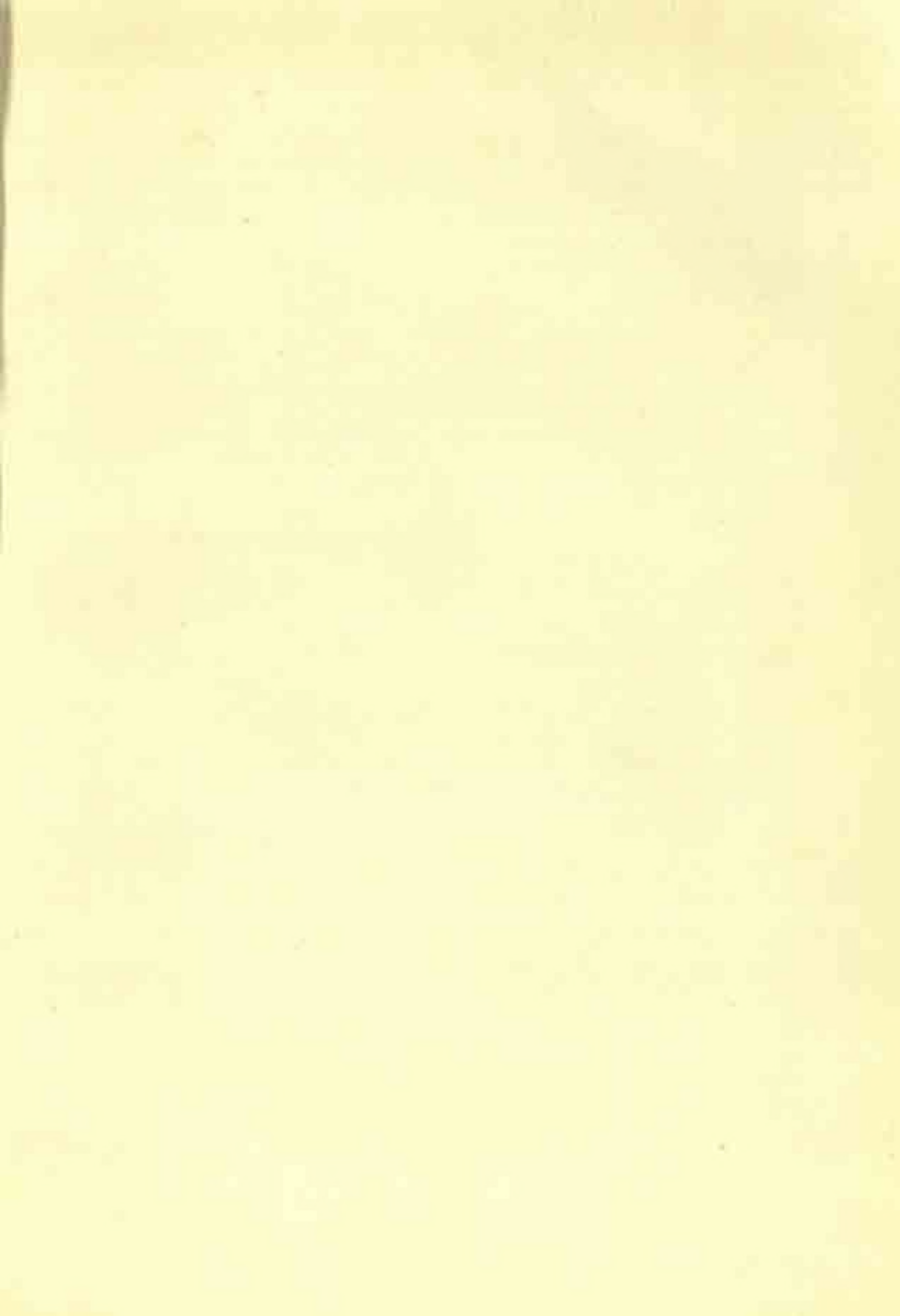


PLATE I



BRONZE DOOR OF CHURCH OF SAN ZENO, VERONA (1139), AS EXAMPLE OF ARCHAIC DESIGN

Ph. Anderson, Rome

Historical Cycles

by O. G. S. CRAWFORD

HISTORY has been studied and histories written for more than two millennia. From time to time attempts have been made to discern some pattern or design running through it. But they have usually failed because the data have been inadequate. You cannot see the pattern of a carpet when only a minute portion is uncovered, and you cannot discern the pattern of history until large portions of it are available for examination. It was not until the 19th century that really long vistas were opened up by archaeological exploration in the East. Here, in Egypt, Mesopotamia and Crete, there were found the remains of forgotten civilizations; and Sir Flinders Petrie, one of the pioneers in that work of epoch-making in the literal sense, has himself sketched an outline of the pattern he believes he can see emerging. The present essay is an attempt to interpret and explain that pattern.

Only from an altitude of five feet or so can the pattern of a carpet be seen; it looks quite different when you are lying on the floor. In just the same way crop-markings on an ancient site can only be seen properly from above. To see the sweep of history rather than its details you must stand back and view it from a height of detachment.

History is the time-aspect of human affairs—the fourth dimension in which we cannot travel. The difficulty may be appreciated by a comparison with geography and the space-aspect. Geography is concerned with the surface of the earth, and is therefore essentially a study in three dimensions. Its primary objective is to construct a map of the whole world, and this task, now nearly complete, is performed by millions of measurements of lengths and angles. From this world-map gradually emerge certain generalizations, whose very existence may never have been suspected, even by the map makers themselves. The geographer, geologist and economist generalize upon the basis provided by the surveyor. The geologist can reduce to order the apparently chaotic mountain-ranges which cross the world from the Pyrenees to Patagonia. He can even forecast the probable existence of

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strata, which, without the map, would for ever have remained unknown. (Thus was the Kentish coalfield discovered). These results have all been achieved within the last century or two, and they are made possible by the fact that we can travel in Space.

But we cannot travel in Time. We cannot live in ancient Greece or in Ur. It is impossible to compile a chart or chronological table of the past as complete and accurate in its own way as was our world-map. The most we can do is to laboriously piece together such fragments as survive, in written records or in the rubbish-heaps of buried cities. It must necessarily be a long time before generalizations can be built up on such foundations, before we can see the pattern of history plainly.

There is the added risk of seeing a pattern where none exists. With so many mere scraps of knowledge, the historian of mankind may be tempted to select only those which suit his purpose. But some kind of selective treatment is demanded. If the explanation suggested is the right one, *all* the facts—both those first selected and the rest—will eventually find their place in the scheme, or at least be found not inconsistent with it; and the theory will come to be accepted. The theory of evolution was formed in this way, and it is of course still universally accepted. If the explanation here put forward can be used as the basis of forecasting, it will acquire additional merit.

Complete originality is not claimed for the ideas here suggested. Neither the organic concept of society (the view that it is a living organism) nor the rhythmical or wave theory of civilization is a recent invention. The one has been developed by many philosophers, by Comte, Spencer, Liliensfeld and Schäffle for instance. The other has been developed by Petrie¹ and Spengler—and doubtless by others. No one however, except Spengler, has brought the wave theory of civilization into relation with the organic concept of society and shown that the two are really inseparable. That is what I propose now to do, so far as that is possible within the limits of an article. To elaborate the theory, to clothe the skeleton with flesh, would demand a far greater knowledge of human history and of biology than I can possibly claim. It would be well worth doing. Meanwhile I feel impelled to say something about it, however inadequate, for, if the theory be true, it is obviously of very far-reaching importance.

¹ Sir Flinders Petrie's *Revolutions of Civilization* (Harper's Library of Living Thought, 3rd edn., 1922) was first published in 1911; but the author informs me that the main thesis was worked out by him many years before this date.

HISTORICAL CYCLES

Sir Flinders Petrie's views are set forth in a little book of not more than 14,000 words—about twice as long only as this article. Civilization, he maintains, is intermittent ; it has its seasons—a spring of preparation, a summer of fulfilment, an autumn of decline and a winter of death. In each region cycles of civilization have succeeded each other several times ; and on each occasion the phases are marked by similar characteristics which may be detected by objective methods of study. The evidence of sculpture is valuable, partly because it is less perishable than most works of art ; admittedly, however, it 'is only one, and not the most important, of the many subjects that might be compared throughout various ages', but 'it is available over so long a period in so many countries' (p. 9). It is therefore used as the main, but not the only criterion in his survey. Others are painting, literature, music, mechanics and wealth ; political development is also brought into the scheme, though only occasionally referred to.

The region regarded as a composite whole is that of Europe and Egypt. The centre of gravity shifted within it from Egypt to Greece and thence to Rome and Western Europe ; but there was throughout the area a series of phases or waves of culture, separated by troughs. During the last 10,000 years or thereabouts he finds evidence of eight phases or Great Years. The first two are prehistoric ; then came five covering the whole dynastic period of Egypt ; last of all came the Classical and Modern (or West European) phases. It is possible to criticize the phases as Sir Flinders Petrie visualizes them, though there are few who have the range of knowledge required for such a task. What matters now is the *existence* of such phases, which some deny. To this main issue all others are subsidiary. We consider that Sir Flinders Petrie has proved his case quite conclusively. Ever since we first read the book twenty years ago, we have been testing the theory against the background of whatever we have at the time been studying, whether in books or museums or in the world of today ; and we have found it fit the facts. A theory which works is already half proved.

Each phase passes from archaism through maturity to decline. 'The careful working of detail separately, without treating it as part of a whole to be blended together, is the essential mark of archaism' (pp. 21, 22). Note, in passing, that this is a purely *objective* test, quite free from the bias of taste or prejudice and capable of being applied almost mechanically by an expert. Examples of archaism in art will probably occur to all. Such are the early Greek statues with the 'archaic' grin, preceding the period of classical maturity. In the

ANTIQUITY

West European phase, archaic beginnings (as at Chartres) blossomed into maturity in the middle of the 13th century (as at Bamberg, Strasburg and Salisbury). The difference between archaism and maturity is well brought out by comparing the bronze doors of San Zeno at Verona with those panels of mature and almost over-ripe perfection on the doors of the Baptistery at Florence. (Plates I-III). The same cyclical evolution may be seen in medieval brasses and sepulchral effigies, the period of decline being clearly marked in the stiff and lifeless character of Elizabethan examples.

Similar features are observed in painting and the other arts which (it is claimed) reach their maturity in any given period, not simultaneously but in an orderly succession. Thus sculpture was the first to reach perfection both in the Classical and West European phases. Painting reached its zenith in West European art about 1500, literature about 1600, and music about 1800.

There is a tendency for each of these eight phases to last longer than its predecessor, and for the transition or hiatus between each to become greater and (for the people of the time) less uncomfortable.

The last phase before the present, the classical phase, is regarded by Petrie as a single phase. We think it possible however that it was a curve (or wave) with a double peak (or crest) represented by Greece and Rome respectively. It seems too that Rome began where Greece left off, perhaps after some recapitulation of the earlier stages. Is it not possible that the present phase of Western Civilization also has, though to a less degree, a double peak represented by Europe and America? There are many resemblances between modern America and ancient Rome; and Europe now plays in some respects the rôle of ancient Greece. Europe, like Greece, has been enfeebled by futile internecine strife and competitive armaments; but remains a storehouse of dead art to be ransacked by transatlantic connoisseurs. As M. Merlin has pointed out (ANTIQUITY, IV, 413) the Romans pillaged Greece in precisely the same manner.

For the rest the reader must consult the book itself, which is too compact and too full of ideas to be adequately summarized. This article assumes as proven the theory there set forth, and attempts to correlate it with a yet more inclusive generalization. Some day perhaps we may develop it in full.

A few words, however, must be said about the causes which Sir Flinders Petrie suggests as responsible for the existence of phases. Whether they wholly explain the cyclical development of culture may



BRONZE DOOR OF BAPTISTERY, FLORENCE, BY LORENZO GHIERTI (1378-1450), AN EXAMPLE OF MATURE DISHON
 Pk. Alinari

HISTORICAL CYCLES

perhaps be questioned. It is probable however that they are at least contributory causes, as he himself says. He points out that the phase or Great Year is heralded by invasion. Historically these invasions have generally been from colder into warmer lands, from regions where life is hard into those where it is easier. Inured to striving in their homeland, the invaders have developed by natural selection into a race of hardy folk; and the impetus of their more energetic mode of life carries them forward, in the better land of their adoption, to greater and higher achievements than the natives. They 'thrive vastly' there, 'until their tone is let down to their conditions' (p. 125). There are, moreover, many new problems of adjustment to be solved. When this is achieved and a régime of living established, complete freedom of expression is soon gained and 'strife being ended, decay sets in shortly after'. The accumulation of capital contributes to the same result, by lessening the need of effort. 'The maximum of wealth must inevitably lead to the downfall' (p. 126).

Changes of climate may be another contributory cause, and periods of desiccation do actually coincide with periods of migration, but they do not (Petrie thinks) account for the regularity of the phase. This he attributes to the lapse of time required to effect a complete fusion of different racial stocks, which he calculates should take from six to eight centuries, and the explanation, wherever it can be tested by the facts of history, seems adequate. 'The complete crossing of two races produces the maximum of ability, and . . . from that point repeated generations diminish the ability . . . But probably each of the other causes before noted may bear a part' (p. 124). He concludes with the suggestion that 'eugenics will, in some future civilization, carefully segregate fine races and prohibit continual mixture, until they have a distinct type, which will start a new civilization when transplanted. The future progress of mankind may depend as much on isolation to establish a type as on fusion of types when established' (p. 131).

As a corollary of this we would add that the longer a culture remains isolated, developing along its own lines, the more specialized it becomes and the less easy it is to cross it with another. It gradually becomes a different species. It is a biological fact that the mating of individuals of different species is infertile. Too great contrasts produce sterility. It seems also to be a rule of history that when a higher (or more advanced) culture invades and conquers a lower, it exterminates it, and often the people too. Thus the Roman invasion killed late Celtic art in Britain, and western civilization has proved fatal to many primitive races. The

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invasion of one barbarism by another is also infertile and might perhaps be compared with the marriage of children. It seems as if the relative age of mating cultures has got to be exactly right, as well as the degree of their affinity.

The new phase is conceived when the invader-cells swarm in from without. The social body gradually takes shape; the structural lines form and become more and more complex. With maturity comes full self-consciousness. With the approach of age the culture gradually loses energy until at last it dies, generally to be reborn in the same manner. These processes obey the laws of growth because they are life-processes. They cannot be forced. Violent attempts to do so generally fail (though sometimes they may be as necessary as a surgical operation). The way to stimulate growth is by means of educational propaganda.

What emerges from all this, is, we think, a generalization of wide and far-reaching importance, namely that *each phase of civilization has a life of its own, and may be regarded as if it were a species composed of living creatures*. The phase as a whole corresponds to the life of the species as a whole; the units composing the phase at any given moment of history (the human beings) correspond to the individuals composing the species. Both come into existence and pass through maturity to decline and extinction, to be replaced as a rule by another phase or species issuing from it. The evolution of culture is exactly parallel to the evolution of organic life as a whole.

The idea is not of course new; but it has never, we think, been effectively grafted on to the wave theory of civilization. One of its most recent advocates, Sir Arthur Keith, goes so far as to say²: 'The resemblance between the body physiological and the body politic is more than an analogy; it is a reality'.

The cultural community is the unit, and, to conserve the analogy, it is a multi-cellular organism. But in point of fact multi-cellular organisms have evolved from a single cell, and if the analogy is a just one, we should find that communities have done so too. History tells us that they do. The unit of the multi-cellular organism is a single cell; the unit of the community is a single human being.³ We may take *Homo Sapiens*

² *Concerning Man's Origin* (Putnam, 1928), quoted in a most suggestive article on cancer in the *British Medical Journal* (5 October 1929, p. 607), by W. Sampson Handley, M.S., F.R.C.S.

³ Barth regarded the family rather than the individual as the unit.

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when he first appears as representing this unit, before its incorporation into the first community, represented, in a slightly advanced stage perhaps, by the city states of Sumer (Ur, Kish and so forth). The transition may have been relatively abrupt, for we now know that, up to about 5000 or 4000 B.C. the caves of Kurdistan were still inhabited by primitive stone-age individuals, as they had been for countless ages before. The *latest* relics found in the top layers of these caves correspond exactly with the *earliest* found in Sumer and in Assyria.⁴ Clearly therefore at some date round about 5000 B.C. the solitary free-roving human cell was integrated into the multi-cellular organism of a community.⁵ The same change occurred elsewhere, probably about the same time. The predynastic Egyptians succeeded the neolithic desert-rovers of the Sahara, and may well have been directly descended from them. The neolithic Cretans became the citizens of Cnossos.

Together with this integration, and as a necessary accompaniment of it, there developed specialization of function. The hunter is a law unto himself, self-determined and independent, just like the free-swimming cell. The citizen of a civilized community has already sacrificed much of his independence in exchange for more leisure and an easier mode of existence. Division of labour has arrived, and with it all the implications of the social contract.

The course of biological evolution is very similar. From the single cell there developed, some eleven hundred million years ago, 'organisms composed of many cells living together in a communal life like that of a small village or a great city. The cells are now specialized into groups, and each kind of cell follows a trade or profession, exerting for the community its special skill, receiving from the community in exchange food, warmth and protection. To carry out the scheme and to ensure that each cell receives its due share of food, and of such cell-products as it no longer makes for itself, elaborate systems of conduits—the circulatory, lymphatic and glandular systems—have been evolved; and equally elaborate machinery, comparable with the telegraphs,

⁴ In caves near Sulaimanya in southern Kurdistan, Miss Garrod found Mousterian (old palaeolithic) flint implements in the lower layers, overlaid by a later palaeolithic layer and finally by a top neolithic layer containing painted pottery of the antediluvian Sumerian type. See *Bulletin of the American School of Prehistoric Research* (C. G. MacCurdy, Director), no. 6, March 1930, pp. 8-43.

⁵ We may of course regard whatever lay between the solitary hunter and the village or city state as transitional and as corresponding perhaps to the early cell-aggregations of biology—such as flagellate colonies, sponges and polyps.

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telephones and newspaper and business offices of the city, brings information of the outer world, and controls the activities of the cell community'.⁶

Civilization advances by the integration of its cells into ever larger and larger organizations—from the family to the tribe, city and nation, and from nation to empire, confederacy and league. The process, as we have seen, is not continuous but spasmodic. The integrated multi-cellular community is an organism with a life-cycle of its own. The cycle ends with the break-up or death of the organism. The tribe is dispersed; the city is destroyed; the nation decays, shrivels up and disappears. But a new one generally⁷ rises from the ashes of the old. The constituent cells, the individual human beings, live on; and though not individually immortal, like body-cells, they are so in bulk, and in effect.

It is this multi-cellular social organism⁸—or rather the species to which it belongs—that, during its phase of existence, passes through those stages which Sir Flinders Petrie has described. We may speak of this unit as a *culture*, a *civilization*, a *community* or (metaphorically) as an *organism*. These, however, are abstractions. What we are dealing with in reality is a unit or individual in four dimensions. The community—such as a city-state, for instance—has a geographical extension in three dimensions and a temporal one in the fourth. Its full content is, let us say, 200 square miles \times 500 years.⁹ This is perfectly plain when we are dealing with a multi-cellular organism like a human being, whose biography can be written. Civilization, when it first appears, represents life organizing itself again *de novo* at a higher level of consciousness, taking as its unit or *brick* an intelligent human being instead of an unintelligent cell. Obviously therefore our enquiry

⁶ Handley in *B.M.J.* (op. cit. supra).

⁷ But not always; some of the American civilizations for instance have vanished utterly and have not been replaced by any other.

⁸ In the analogy we compare the life-history of a human community with the life-history of a species. But we compare the *organization* of that community to the organization (structure, function, etc.) of the individual multi-cellular organism. The human community recapitulates, as we shall see below, the life-history, not of the individual organism but of the species. But since the organism itself, as the species develops, recapitulates its own evolution, there is a general resemblance between the life-history of both organism and community.

⁹ There is also of course a certain thickness, but for our present purpose this may be ignored.

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into the origin and nature of a civilized community must begin with an investigation of the origin and nature of this human being; just as the study of biology begins with the problem of the origin of the living cell from which all living things are descended. The biological problem is still unsolved, but there seems to be a fundamental difference—can it be merely one of *organization*?—between living and dead matter. The birth of life marks the beginning of a new chapter, though we cannot find the page in the book of nature.

So, too, there is an uncertainty about the precise moment when *Homo Sapiens* emerged from *Homo Insipiens*, but everyone recognizes the difference between, say, the most primitive savage and his lemurian ancestor. Another new chapter has been begun. It may be suggested that the essential change is from instinctive to intelligent reaction, or, stated in other terms, from passive adaptation to environment to active control of it. (This does not of course imply that instinct and adaptation cease to function; we know that they do; it is rather comparable with the fact that living matter retains many of the properties of dead matter, along with the new ones added). Man as such comes first upon the stage when he becomes a tool-making animal; that marks the beginning of chapter 2, chapter 1 being the birth of life.

For countless ages man remained a solitary tool-using hunter. He improved his tools and evolved physically as an animal, from the stage represented by the Piltdown skull to that of the later cave-dwellers where, physically, he still remains.¹⁰ Then, somewhere about 5000 B.C., when the Ice Age was practically over, he began a new chapter by discovering agriculture and the domestication of animals, and by ceasing to be a wanderer. That was the second epoch-making discovery of human history, for it made sedentary life in communities possible. Some freedom of movement was temporarily sacrificed for the innumerable compensations received in exchange. We are still living in this chapter.

The essence of this new integration of human society, is surely that it is, to a far greater extent than the first, a self-conscious unit. The degree of self-consciousness in a community may be relatively greater or smaller, but it is invariably present in some measure. By some it is nowadays called patriotism, by others group-consciousness. Patriotism in the last resort is merely the mutual offensive action and

¹⁰ For an elaboration of this argument see my *Man and His Past* (Oxford, 1921), especially the first two chapters.

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reaction of communities; it could not exist without an inherent potentiality of conflict. This new self-conscious unit has come into existence through the amalgamation of hitherto separate individuals. It is a new manifestation. It stands in the same relation to the individuals which compose it as does the whole body of an animal to the cells of its body. It has in fact evolved in much the same way. Why has it done so? Surely because, being a form of life, it obeys the laws of development of all living things and *recapitulates*. It is even possible to be more precise. If this is recapitulation, it should be of much shorter duration than that which is recapitulated. We do not, unfortunately, know how many years it took to evolve the first multicellular organism from the first cell, but we cannot err in reckoning it in hundreds of millions of years.¹¹ From the invention of tools to the first city state cannot have been more than a few hundreds of thousands of years at the outside, for man himself is not much older.

It next becomes necessary to determine, if we can, to what biological stage or stages belong the civilized communities of historic times. To do so we must examine the characteristics of a civilized community.

It is primarily a self-conscious unit acting as a single whole. This implies a single directing brain or seat of consciousness which can compel such action or rely upon its performance. 'The simplest rudimentary conception of political action is this, that one man imposes a command upon another'.¹² (There may, of course, be the complications of decentralized control, but they do not affect the main proposition). A civilized community has therefore definitely got beyond the stage of mere cell-aggregations. Perhaps the city state of Sumeria corresponds to a trilobite. It is in Sumer that we find the earliest clear manifestation of group-consciousness, represented, precisely as it should be, by the deification of the city itself. 'At Fara, the most primitive Sumerian site that has yet [in 1916] been examined, we find the god Shuruppak giving his own name to the city around his shrine, and Ningirsu of Lagash dominates and directs his people from the first. Other city-gods . . . are already in existence . . . The authority of each god did not extend beyond the limits of his own people's territory. Each city was content to do battle on his behalf,

¹¹ See *The Science of Life*, by H. G. Wells, J. S. Huxley, and G. P. Wells, vol. 1, p. 207 (table of geological formations with approximate relative lengths and duration in years).

¹² *Introduction to Political Science*, by Sir J. R. Seeley, London, 1896, p. 89.

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and the defeat of one was synonymous with the downfall of the other'.¹² Here we have, at the very dawn of history, precisely what according to our theory we should expect to find—the self-consciousness of the new individual, the group, expressed in terms of religion, and its patriotism in terms of conflict.

The character of the community is best seen in action; and in primitive civilizations external action is generally synonymous with warfare. Primitive tribal warfare, like the still earlier encounters of individual hunters, is the blind instinctive clash of conflicting interests, acting usually under the stimulus of hunger or sex. The reaction, too, is direct and immediate. The warfare of city-states probably proceeded from similar causes; but it was less instinctive and more intelligently controlled. The warfare of European nations, or of groups of nations, probably represents the highest achievement of concerted group-action yet reached by the human race. It is therefore necessary to devote a few lines to it, in order to see more clearly what biological stage we have today reached in our recapitulation.

The organization of a modern army in the field is a very beautiful thing. Such an army is a most delicately adjusted living organism, whose morale—rightly prized very highly—is its soul. It consists also of brain and body; the Commander-in-Chief is the brain; the soldiers in the fighting-line are the body, or rather part of it. Impressions from the outer world (where the enemy resides) reach the brain through the organs of sense. In an army the flash-spotters and aeroplane-observers are the eyes, the sound-rangers the ears, the observers in the front line are like antennae or fingers, the Army Service Corps is the stomach and legs, the Corps of Signallers the nerves. Signals reach the Intelligence Department which, like the neopallium, co-ordinates the impressions received, and, itself a part of the brain, transmits them to that other part of itself which directs action, the Department of Operations. Thus informed the Will, the Commander-in-Chief, issues orders which travel along a hundred nerves each to its destination, and at zero point the army moves forward.

In its normal everyday life a community might act in a similar way, if there should be a centralized control and a well-developed group-consciousness. Some nations and city-states have thus acted at their maturity, when the civic body is still young and healthy and its reactions quick and senses keen. It can only do so even then when it

¹² L. W. King, *A History of Sumer and Akkad*, London, 1916, pp. 84, 85.

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has a sovereign capable of directing its actions, and history shows that this combination does not often occur.

It is plain that some modern nations have reached, in their recapitulation, an already advanced stage. It would need a biologist's knowledge to give precision, however, to the analogy at this point, and this unfortunately we do not possess. Perhaps modern European states are passing through the stage of vertebrate or even mammalian life.* Perhaps, however, they are merely having a reptilian nightmare on the road to mutual extermination, and the torch may be picked up later on by some now obscure racial group on the confines of western civilization. In favour of the first suggestion is the fact that modern states have a brain; in favour of the second that it is a small and poor one and only used in extremities. Whichever equation we adopt, this advance from multi-cell to vertebrate (whether reptile or mammal) is of far shorter duration than that from a single cell to a many-celled organism; and the corresponding advance from city-state to modern nation is proportionately shorter, as it should be. May we not conclude then, that there is a good case for regarding social evolution as a recapitulation of organic evolution?

Before passing on to the next point it should be noted that in social as in biological evolution there is a main line or stem, with branches. Some organisms have branched off and have either become extinct or have remained down to the present day in their primitive state, living on side by side with their more advanced cousins. Some advance to a point and remain there, or go backwards. These branchings off occur at every stage. Palaeolithic hunters are now extinct,¹⁴ but neolithic collectors survive in the Australian aborigines, and elsewhere; just as primitive forms of life abound in every pond.

It has already been seen that, according to our theory, the phase or life-history (in Petrie's sense) of a society is equivalent to a species, whose evolution it recapitulates; and that both evolve in the same kind of way, from simple to complex. In both, too, the most important fresh starts originate *not* from the most advanced members but from those which have not sacrificed their primitive plasticity to premature

* Sir Arthur Keith, however (1924, p. 9) considers that 'the highest stage which has been yet reached by man in the evolution of human societies has hardly passed beyond Nature's lowest stage—that represented by sponges'. We have no room here to argue the point, which moreover is not relevant to our main thesis.

¹⁴ Unless the Esquimaux be taken to represent them; but the Esquimaux are not *solitary* hunters.

PLATE III



PANEL OF BRONZE DOOR AT FLORENCE, COMPLETED 1487, AN EXAMPLE OF MATURE SCULPTURE
Ph. Allart

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and excessive specialization. It was the Nordic barbarians on the fringe of the Roman world who initiated the modern phase; they were in touch with Roman civilization but not part of it. The classical phase was started by barbarians from Central Europe, in touch with the Aegean world but not of it. The last great advance in evolution was made by an insignificant little creature whose very existence was probably unknown to the reptilian overlords it eventually superseded.¹⁵

Looking at the process as a whole it would seem that life evolves in a spiral. It begins with a single cell. After countless ages of complex development an organism is evolved which becomes in its turn the unit of another cycle. We are back where we started but on a higher plane. The human being becomes the unit of organized society, and this, we must suppose, will evolve till it too in turn becomes the single complex unit or individual of yet another cycle. Clearly this process foreshadows the ultimate achievement of a single world-state, in which the whole human race shall be organized as a single social organism. This need not necessarily imply that every existing race and society will be at once incorporated in the world-state. When the last new start was made with the formation of human society, other forms of life, represented by other species of animals and plants, were not all caught up into the new organism, but only such as were of use to it and which could find a place in it, and those but gradually. Domestic animals and, later, plants—dogs, cats, horses, cattle, sheep, goats, pigs: corn, palms, olives, vines—were adopted and are still an essential element in human society; they therefore survive. Those animals which do not, or which are definitely antagonistic to it, having refused to become incorporated, tend to become extinct. There were many more species in palaeolithic and even in neolithic times than there are today, and the extinction of the larger fauna is now proceeding with great rapidity.

We may therefore expect that those human societies and races which cannot be assimilated by the world-state will eventually die out.

This world-state is also foreshadowed by the international character of science. The growth of the conception of a pool of world-knowledge would be interesting to trace. There is now coming into existence a body of knowledge, collected by workers in this universal Intelligence

¹⁵ See Professor Elliot Smith, Presidential address, Section II, British Association (Dundee, 1912), Report, pp. 575-98.

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Department, for the use of future Directors of Operations. Unfortunately (as we think) thought has outstripped the means of action. The existing forms of political organization, though already out-of-date, make use of this knowledge not for the general good but for lower and more immediate ends, including that of mutual extermination. Still more unfortunately they are aided and abetted in this task by men of science themselves who should know better. Perhaps however the new phase can only arise from the chaos of the old one when it crashes ; so that the sooner this happens, the sooner the next phase will begin.

If this new cycle of evolution is to return spirally like the rest to a point immediately above its starting point, the world-state will be equivalent to the human being in organic evolution ; just as the present states were equivalent to some earlier animal. This must follow logically from the recapitulatory process now in progress, and may even be forecasted as its inevitable goal. The work of integration and reintegration of ' individuals ' persists and follows recognizable ' laws '. What the cell is to the human body, the human body is to the world-state. What is to be the next integration, in which the world-state will be merely the single unit, cell, or, as Professor Julian Huxley would call it, ' third grade individual ' ? Is there going to be another ? If there is it can hardly be of this world alone, since the whole world will be its body.

Can we extend the analogy backwards and detect the unit which is to the cell what the cell is to the human body ?

We can at least see that, if the analogy here sketched is sound, the evolution of life proceeds upon an orderly plan, intelligible and possibly predictable. We see that the very large is explicable in terms of the very small, just as in physics. In the probability-waves which determine the emergence of certain features of civilized life, we catch an elusive, perhaps delusive, yet fascinating glimpse of behaviour which seems to resemble the behaviour of the constituent ultimate elements of matter. Sometimes we think we can see some meaning in the dance of shadows upon the wall of the cave ; and then we lose it again. Was it really there ? Or was it only our own shadows that we saw ?

NOTE I

No attempt has been made in the above article either to anticipate objections to the theory propounded in it, or to deal with criticisms which have been made about the cyclical view of history. It seemed

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better to set down the writer's own ideas as clearly and as briefly as possible. Any other course would confuse the issue and expand the account to an impossible size. For similar reasons little reference has been made to previous writers, though acknowledgments have been made whenever the parentage of an idea or a statement was known. In addition to the books or articles already referred to the following may be quoted :—

Social Adaptation : a study in the development of the doctrine of adaptation as a theory of social progress, by Lucius Moody Bristol. *Harvard Economic Studies*, vol. xiv. *Harvard University Press* [Milford, London], 1915.

Warfare in the Human Body : essays on method, malignity, repair and allied subjects, by Morley Roberts. *Eveleigh Nash*, London [1920].

'Does Man's Body represent a Commonwealth?' by Sir Arthur Keith. *The R.P.A. Annual*, 1924, 2-12.

Concerning Man's Origin, by Prof. Sir Arthur Keith. *Watts*, London, 1927.

'The theory of Historical Cycles', by R. G. Collingwood. I. Oswald Spengler. *ANTIQUITY*, 1927, 1, 311-325. II. 'Cycles and Progress', *ib. id.* 435-446.

Note of criticism on the above by Sir Flinders Petrie, published in *ANTIQUITY*, 1928, II, 207-8.

The Ascent of Humanity : an essay on the evolution of civilization, by Gerald Heard. *Jonathan Cape*, London, 1929. Reviewed in *ANTIQUITY*, 1930, IV, 5-11.

The above list does not claim to be in any sense a bibliography or even a complete list of 'books and articles consulted'. Some of these, and amongst them some of the most important, have been quoted already in the footnotes. Some account of the principal philosophers who have dealt with the subject will be found in the books quoted, particularly in the first mentioned (Mr Bristol's).

NOTE II

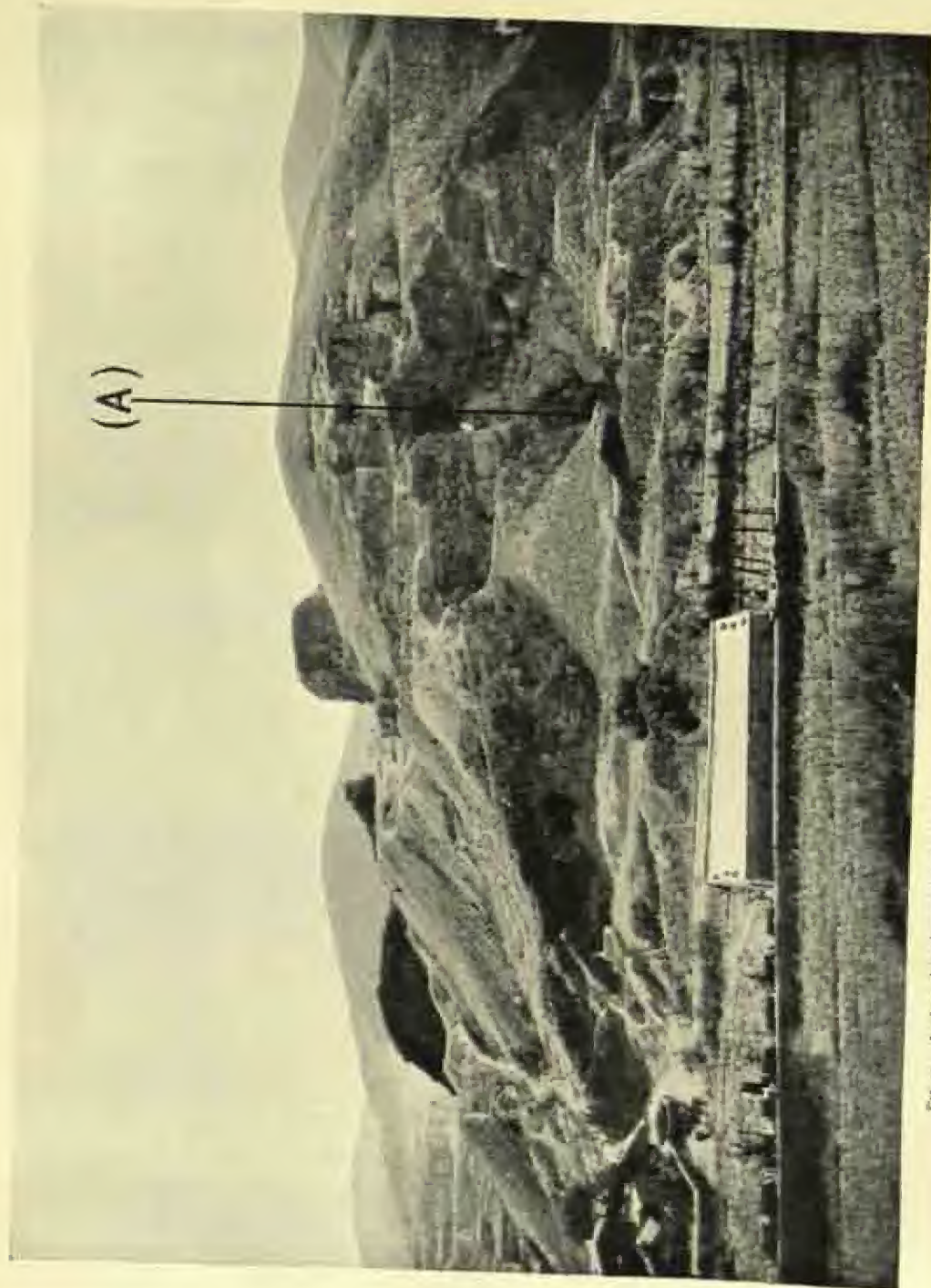
The early stages of integration are naturally the most difficult to observe, partly because in them it is very difficult to say whether the *unit* is the evolving group or the individual forming part of it ;

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and partly because historically the hypothetical nomadic precursors have vanished leaving but the scantiest traces of their existence. Their very mode of life ensures this. Precisely the same difficulty is encountered in biology. 'Which are the individuals of the colonial polyp *Obelia*—the polyps at the end of the branches or the colony as a whole? If separateness be the criterion the colony is the individual; but what then of the medusae, for a time part of the colony, then budded off to lead an independent existence? A single worker ant is separate and distinct enough; but it is not independent, and has no more biological meaning apart from the ant-community than has a human finger amputated from the body'. The writer decides that 'an individual is not a stable thing in itself, but rather a history, a series of events tied together and unified in a particular way'. In other words, individuality can only exist in four dimensions. 'It is a method of acting and becoming; it is never identical with itself for two consecutive moments of its career. When we take it at any given moment and examine it, it possesses . . . a certain degree of unity in its construction, a unity in space. When we look at it as a history, we find that it has a certain unity in time. The different events of its history cooperate to ensure its own continuance or the continuance of new systems like itself'.* This description applies admirably to any one of Petrie's phases, or to any of its component units. The thread of unity here is provided by *tradition*, the outcome of speech and writing. (The writer's debt to this article of Professor Huxley's will be obvious, and he wishes gratefully to acknowledge it).

* 'What is Individuality?' by Julian Huxley, *The Realist*, vol. 1, no. 1, April 1929, pp. 109-121.





(A)

FIG. 1. A view of the limestone hill at Cham Kón Tón tunnelled by extensive caves, in one of which (indicated by line A) the fossil remains of the Peking Man were found.

The Discovery of Primitive Man in China

by G. ELLIOT SMITH

AT the time when Darwin published his *Descent of Man* comparatively little was known of the fossil remains either of men or apes, so that the discussion of the evidence of palaeontology played an altogether insignificant part in his argument. Apart from the discoveries that had been made in the Neanderthal cave and at Gibraltar, nothing was known of fossil man, and what little was known was puzzling rather than helpful. Little more had then been recovered of the fossil remains of apes than a few fragments of *Pliopithecus* and *Dryopithecus*.

During the sixty years that have elapsed since those times, however, the evidence of palaeontology has come to play an increasingly prominent part in the discussion of human evolution, until at the present day it is the aspect of the problem that appeals most to the man in the street when the question of man's origin comes up for consideration. It is only forty years since any really early remains of the human family were discovered, and it is a matter of some interest to discuss the circumstances which have led to the recovery of the remains of early Pleistocene man.

Pithecanthropus was discovered twenty years after the publication of Darwin's *Descent of Man*. There had been much discussion, not merely on the morphological side of the question, but also on the problems of geographical distribution of apes and men that so closely affected the problem of man's evolution. The anthropoid apes ranged from Africa and Europe in the west as far as the eastern limits of the original Asiatic continent at a time when it included Borneo and Java as part of the unbroken land-mass. But whereas the chimpanzee, gorilla, and *Dryopithecus* seem to have wandered towards the west from their original home in the region of the Siwalik Hills of northern India, the orang-utans seem to have preferred the Far East, where also the gibbons, after wandering west and east, have survived. Their presence in Borneo and elsewhere in the Malay Archipelago suggested the possibility that man's ancestors may also have gone east.

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In the year 1890 Dr Eugène Dubois, a junior member of the staff of the anatomy department in the University of Amsterdam, was offered promotion to the position of prosector, which was the step towards the eventual attainment of the full professorship. To the surprise of his colleagues he declined this promotion, and surprise turned to amazement when he gave the reason that he was going out to the East Indies to search for fossil remains of primitive man! He was impressed by the fact that as the western area of migration of the higher Primates had failed to provide any conclusive evidence of really early man, it might be worth exploiting the possibilities of the eastern route and determining whether the archaic members of the human family may not have followed the footsteps of the ancestors of the orang-utan. He resigned his position in Amsterdam and went out to the Indies as an army doctor, and began to search among the Pleistocene and Pliocene fossiliferous gravels in Java for the object of his quest. The most amazing aspect of this adventure was Dr Dubois's discovery of the sort of thing that had inspired his mission. In 1891 he found in the gravels on the banks of the Solo river, which natives of central Java refer to as Bengawan or 'Great River', the fossilized remains of a braincase, a couple of teeth and a femur. When these fossils were shown at the International Congress of Zoologists in Leyden in 1894 they provoked a controversy which has continued ever since then.

In the first place the nature of the braincase was a matter of dispute—whether it was part of a hitherto unknown gigantic ape or of an equally unknown primitive type of human being, or as Dr Dubois himself maintained, a creature that was not strictly either simian or human, but a link between the two, the position of which was so enigmatic that it would be misleading to call it either an ape or a man. This problem, in spite of nearly forty years of discussion, is still in dispute. Although the majority of anthropologists admit *Pithecanthropus* to membership of the human family, there is still wide divergence of opinion as to what his position in the family is, whether he is in the direct line of descent of later men, or whether he represents a specialized and divergent member of the family. Then again there is the question as to whether or not the teeth and the thigh bone which were found in the same gravels, and in a similar state of fossilization, are parts of the same or similar individuals, or whether the femur of a more definitely human type of being happened to be deposited in the same bed of gravel with the remains of the Ape-man, who was a fantastic caricature of a human being. There are the widest divergences of opinion even at

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the present time on this issue. Then again the question of the geological age of the fossils has been a subject of controversy. When Dr Dubois first discovered the fossils he was impressed by the fact that the associated mammalian remains seemed to be identical with types which occur in the Pliocene beds in the Indian Siwaliks. Hence he regarded the fossils as evidence of the former existence in Java of Tertiary man. The further study of these remains, and in particular the gradual accumulation of knowledge regarding the fossil mammalia of Asia, have since convinced most palaeontologists that the age of the Java fossils is Pleistocene and not Pliocene. Two years ago (22 February 1929) Professor Henry Fairfield Osborn, the President of the American Museum in New York, called attention (*Science*, vol. 69, p. 216) to certain facts, which had impressed Professor Dietrich of Berlin and himself, that the Proboscidean and other mammalian remains associated with the human fossils belong not to the Early Pleistocene but to the Middle Pleistocene Age, suggesting that the Ape-man of Java was relatively much more recent than had hitherto been supposed.

The total result of these discussions is that the precise age and the significance of the fossils found by Dr Dubois forty years ago are still matters of lively controversy and considerable doubt.

More than twenty years ago the late Mr Charles Dawson, a lawyer practising at Lewes in Sussex, who had then devoted more than thirty years of his life to the hobby of hunting for fossil remains of extinct animals in the Weald of Sussex, was attending a land court at the Manor of Barkham near Piltdown, when he noticed the road leading up to the manor house being repaired with flint. During the sitting of the manorial court over which he was presiding, instead of giving the whole of his attention to the legal business in hand, he was unable to restrain his roving fancies from wondering why people should be using such poor material as flint to repair a road when, as he thought, the cost of bringing it from the nearest source known to him, which was more than five miles away, would have been almost sufficient to have paid for proper road metal. Hence, as soon as the court rose for lunch he went out to make further enquiries, and discovered from the workmen that the reason why flint was being used was that it was present on the spot. The road itself crossed the small patch of gravel which the men were digging up to mend it. Mr Dawson instructed the workmen to keep a look-out for any fossil remains which they might find in this bed of gravel, and from time to time, whenever any excavation was going on, he visited Barkham Manor to keep a watch on the excavation.

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Eventually in 1912, when he visited the spot he found the workmen, in defiance of the instructions he had given them, throwing stones at what they thought was an old coconut obtained from the gravels. He at once rescued the fossilized remains of a piece of a phenomenally thick human braincase, and began excavating there and recovering other pieces. The massiveness of the skull and the Pleistocene age of the deposits suggested to Mr Dawson's mind that he had found part of the braincase of the only Pleistocene man at that time known in Europe. The Heidelberg jaw had been found four years previously and is all that we know of this peculiar type of the human family which probably represents the distinct genus of *Palaeanthropus*. He therefore took this fragment to Dr (now Sir Arthur) Smith Woodward, at that time Keeper of Geology at the British Museum (Natural History), and they set to work to dig the gravels at Piltdown.

In the summer of 1912 they found a fossilized jaw which at once convinced them that they were dealing with a creature totally distinct from the Heidelberg man—one who was very much more primitive and ape-like and also much older even than that Pleistocene man of Germany. The announcement of these discoveries, at a meeting of the Geological Society in London in December 1912, started a series of controversies which were even livelier and more confusing than those which had raged since 1894 around *Pithecanthropus*. For there was not only the same element of doubt as to the significance and age of the Piltdown fragments, but there were several new elements of controversy in the Sussex discoveries. The question of age was subject to the same uncertainty as I have mentioned in the case of *Pithecanthropus*; the fragments of bone had been deposited by running water in gravels; and in these gravels there were the remains of Pliocene as well as Pleistocene mammals. As the skull itself showed no signs of rolling, such as many of the Pliocene fossils displayed, it was assumed that it was contemporaneous with the undamaged Pleistocene fossils. But there were many elements of uncertainty in the determination of the geological age of the specimens, and recently Professor Osborn has been putting forward a view in opposition to the one which is now commonly accepted, that the Piltdown skull may possibly be Tertiary in age and not Quaternary as was supposed. 'The problem is whether it came from a Pliocene gravel bank with a primitive elephant and mastodon, or from a Pleistocene gravel bank with a primitive hippopotamus' (*Science*, 1929, p. 217). There has, moreover, been the liveliest discussion as to whether or not the jaw which was found at

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Pitldown was not that of a chimpanzee rather than of a human being. Even after eighteen years of discussion there is no complete consensus of opinion upon this issue. The problem of the precise mode of reconstruction of the skull gave rise to unseemly and wholly unnecessary discussions which served to create a widespread confusion in the minds, not merely of the general public, but even of anatomists and palaeontologists, and profound doubt as to the importance and precise significance of this great discovery in Sussex. This lack of confidence in the validity of the remains of *Pithecanthropus* and *Eoanthropus* was intensified by the fact that these two doubtful members of the human family were so dissimilar that they seemed to be hardly compatible with one another. This increased the doubt as to whether two primitive members of the human family who were supposed to be roughly contemporaneous one with the other—that is, Early Pleistocene in age—could differ so profoundly as these two skulls did, although the whole breadth of the great continent of Europe and Asia separated them from one another. So profound is the scepticism concerning Pitldown Man that important treatises on the fossil remains of man published in Germany during the last few months have either refrained altogether from referring to the Pitldown discovery (which obviously is of crucial importance) or have stated that the issue is so doubtful as to be excluded from the argument.

Even those of us who have always been convinced that both *Pithecanthropus* and *Eoanthropus* were genuine members of the human family, were somewhat puzzled to know how to define their relations to one another, and precisely what light they shed upon the process of the evolution of later types of human beings.

The discovery of *Sinanthropus* in China has put an end to this uncertainty and marks a new epoch in human palaeontology. The skull found at Chou Kou Tien, on 2 December 1929, has dissipated the chief elements of doubt and uncertainty in regard to the other two genera of the human family, for it not only provides us with much fuller and unequivocal information concerning a third and hitherto unknown genus of early Pleistocene man, but in addition it establishes a bond of union between the other two types, and shows that the Ape-man of Java and the Dawn-man of Pitldown are not really incompatible with one another. Many of the most characteristic features of these two divergent types are combined in the same individual of the genus *Sinanthropus*. Hence it clears away the mists of doubt and suspicion. Thus the discovery in China is not only a tremendous contribution

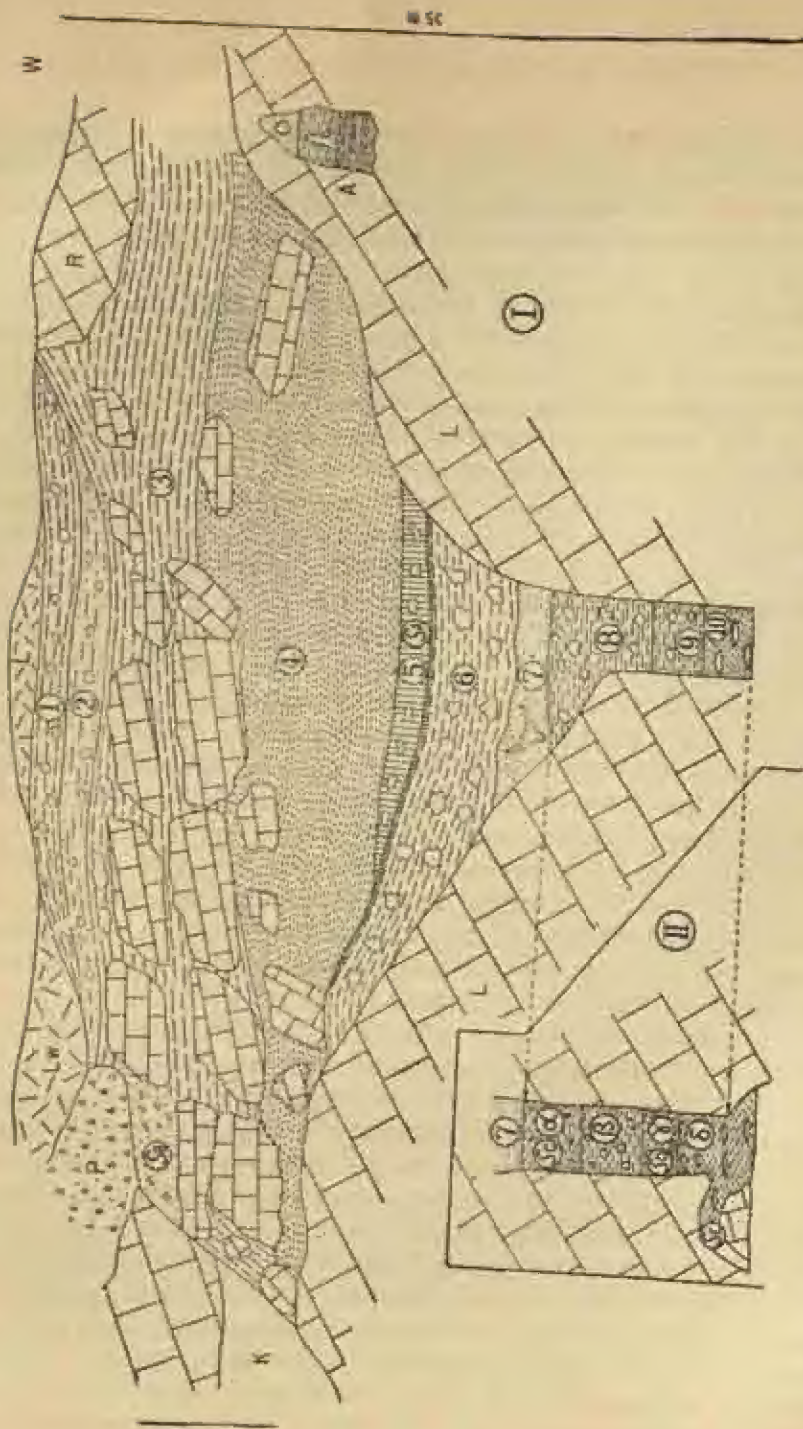


FIG. 2. Diagram of a section prepared by Father Teilhard de Chardin and Dr C. C. Young to illustrate the geological condition of the cave, and the series of ten layers, all of Early Pleistocene age. At each of the spots marked S in the diagram human remains were found.

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to the exact knowledge of early Pleistocene man, but in addition it gives a respectability to these other early men, whose remains were being discredited, and a coherence to our knowledge of all three types which thus establishes upon a sure foundation our knowledge of the most primitive men so far recovered.

The discovery of the Peking remains is a romantic story, differing from the finding of the other two genera, just as the nature of the circumstances under which the fossils were deposited differs from those revealed in Java and in Sussex respectively. The remains of the Peking man were not deposited by running water in river gravels, but left by their original owners on the floor of a cave of Ordovician limestone where they and a large series of mammals dwelt in Early Pleistocene times. Hence the geological age is certain. The elements of doubt which arise in the case of *Pithecanthropus* and *Eoanthropus* do not arise in the case of *Sinanthropus*.

Nearly thirty years ago Dr Haberer purchased in a druggist's shop in Peking a collection of 'dragon's bones' which he sent to Professor Max Schlosser in the University of Munich. Shortly afterwards, in 1903, Professor Schlosser published (in *Abhandlungen der königl. Bayerisch-Akademie, Wissensch. Math. Phys. Klasse*, Bd. XXII, p. 20-21, 1903) a memoir under the title 'Die fossilen Säugethiere Chinas nebst einer Odontographie der recenten Antilopen', giving his identifications of the series of fossil remains he was able to recognize among this collection of Chinese drugs. On pages 20 and 21 of this memoir there is a section called 'The Description of the Primate Types', which is of such exceptional interest and importance that I shall translate that portion of the description which is defined as '? Anthropoide g.n.et sp.ind. '? In his account Professor Schlosser says, 'In the collection recently sent by Dr Haberer from Peking there was a left upper third molar, either of a man or a hitherto unknown anthropoid ape. This tooth is completely fossilized and is quite opaque. Moreover it exhibits between its roots a reddish clay such as is found only in teeth which belong to the Tertiary period and are earlier than the loess. Hence it is probable that a Tertiary age should be ascribed to the specimen. Unfortunately the tooth is already much damaged and its surface corroded by the roots of plants, so that the original appearance of its surface cannot be accurately determined'. After giving an account of the position of the various projections on the surface of the crown in comparison with other teeth, and describing the form of the body of the tooth and its roots with their

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respective measurements, Professor Schlosser proceeds to consider how to determine the zoological status of the original possessor of the tooth. The form of the tooth and morphology of the roots are distinctly man-like. On the other hand the state of preservation of the tooth makes it clear that it is of remote antiquity, possibly as old as the Tertiary period, which suggests the improbability of it belonging to the genus *Homo*. In fact the Tertiary existence of any type of man is not yet established. Hence the possibility has to be considered whether this tooth may belong to a hitherto unknown genus of anthropoid ape, which in the structure of its teeth approached more nearly to man than any other known anthropoid ape. Another possibility, he says, is that the tooth may be that of a human being which in some way became displaced and got into the Tertiary beds although belonging to a more recent period. He suggests, for instance, that possibly the tooth was only of Pleistocene age, which raises the difficulty that the state of fossilization is such as he has only found in teeth which are either Tertiary in age or are referable to the very beginning of the Pleistocene. He admits that he cannot pretend to distinguish between the state of fossilization between the earliest Pleistocene and the Tertiary. He admits that a definite answer to this riddle must necessarily be only tentative—for no other early human remains except *Pithecanthropus* were then available for comparison. No useful purpose would be served by comparing this third molar tooth (with its marked difference in size and much more strongly reduced roots) with the tooth of *Pithecanthropus*, the roots of which were much more exceptionally divergent. He calls particular attention to the fact that the fossil found in China presents a much nearer likeness to the tooth from the Indian Siwaliks which Lydekker has described as *Troglodytes sivalensis*, to which Dubois refers as *Palaeopithecus sivalensis*. The third molar tooth in this Indian anthropoid presents a close resemblance to the Chinese tooth. It is distinguished, however, only by relatively slight differences in size and the position of the roots. After detailed comparisons between these teeth of fossil anthropoids and primitive men (including *Pithecanthropus* and the Neanderthal remains from Krapina) Schlosser refers to the possibility that the tooth from Peking may be the remains of the oldest human being known at that time and one that displayed a closer likeness to the apes than any other known fossil. While admitting that, however unpardonable it might be tacitly to evade the issue, it is important to try and define a systematic position which obviously could not be finally determined by the scanty evidence at that time available.

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Hence he defines the aim of his communication to suggest to later investigators who may enjoy the privilege of carrying out excavations in China the desirability of searching for the remains either of a new fossil anthropoid, a Tertiary man or an early Pleistocene human being. In recording the complete realization of the third possibility adumbrated by the veteran German palaeontologist, it would be unpardonable not to refer to Professor Schlosser's insight and courage. He correctly predicted the age and the nature of the type of being whose damaged tooth came into his possession without any indication either of its provenance or of the geological circumstances under which it had been recovered. One cannot withhold admiration for his wonderful imagination which enabled him to make this amazingly accurate prediction, which the last three years in China have so amply corroborated.

This brilliant forecast was made in 1903, but nothing further was done towards the realization of it until the year 1921, when Professor J. Gunnar Andersson, the Swedish geologist who was acting as the Adviser to the Geological Survey of China, was directed to a deposit of fossil bones at Chou Kou Tien through overhearing the chatter of his native workmen. When he started to examine the rich deposit of fossil bones in the cave at Chou Kou Tien he found amongst these remains a piece of quartz, and at once remarked to his assistants, 'This is primitive man', implying by that statement that as quartz did not naturally occur in this spot, some early Pleistocene human agency must have been responsible for its presence among the bones which he was examining. In a way this statement is almost as remarkable as that which Professor Schlosser had made over twenty years previously.

The funds available for the Chinese Geological Service were inadequate to carry out the examination of these fossils with the thoroughness which their importance merited, but Dr Andersson obtained from Mr Ivar Kreuger of Stockholm financial aid which enabled the investigations to be continued and extended.

The material obtained from Dr Zdansky's excavations at Chou Kou Tien in 1922 was taken to Professor Wiman's laboratory in Upsala for examination; and in 1926, on the occasion of the visit of the Crown Prince of Sweden to Peking it was announced that two human teeth had been found, an immature left lower molar, and a somewhat worn adult right upper premolar.

In the *Bulletin* of the Geological Society of China, 1927, vol. 5,

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nos. 3-4, p. 284, Dr Zdansky gave an account of these teeth, the concluding two paragraphs of which I quote in his own words :—

'Granted the human origin of the teeth, there arises the question of their relation to the living and prehistoric races of man. . . . I am indeed convinced that the existing material provides a wholly inadequate foundation for many of the various theories based upon it. As every fresh discovery of what may be human remains is of such great interest not only to the scientist but also to the layman, it follows only too naturally that it becomes at once the object of the most detailed—and, in my opinion, too detailed—investigation. I decline absolutely to venture any far-reaching conclusions regarding the extremely meagre material described here, and which, I think, cannot be more closely identified than as *Homo sp.*'

'The above has been written largely because I find I am credited, in certain quarters, with the discovery of the 'Peking Man' (*vide* daily newspapers), which is supposed to be of Tertiary age. Leaving until a future date the publication of a detailed description of the fossil fauna from Chou Kou Tien, my purpose here is only to make it clear that my discovery of these teeth (which are of Quaternary age) should be regarded as decidedly interesting but not of epoch-making importance'.

Professor Davidson Black, however, took a different view of the significance of the teeth. To him they were definitely of epoch-making importance. Moreover he had the courage to act upon his conviction. He had been profoundly influenced by the memoir published in 1915 by the late Professor W. D. Matthew, F.R.S. 'Climate and Evolution', (*Annals of the New York Academy of Science*, xxiv, 171). In fact, the possibility (suggested by Dr Matthew's argument) of the discovery of primitive man in China decided Dr Davidson Black to accept the invitation, which he received after the war, to join the staff of the Anatomy Department in the Peking Union Medical College. The reality of Dr Black's conviction was known to me, not only by statements in his private letters, but also in the memoir which he published in 1925 entitled 'Asia and the dispersal of Primates', (*Bull. Geol. Soc. China*, vol. iv., no. 2, p. 133). Hence when, a year later, Dr Zdansky found human teeth in the early Pleistocene or, as was then thought, late Pliocene, beds, Professor Davidson Black regarded this as a definite realization of the aim which he had set before him several years before, and naturally regarded the discovery as truly epoch-making.

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In a communication which, at the request of Dr Andersson, he made at the scientific meeting held in Peking on 22 October 1926, he emphasized these considerations, and was able to interest Dr Henry Houghton, then Director of the Peking Union Medical College, and Mr Edwin Embree, then Secretary of the Rockefeller Foundation, to support an appeal for financial help to carry on the search at Chou Kou Tien. The late Dr Richard Pearce, at that time Director of the Medical Division of the Rockefeller Foundation, so far appreciated the significance of the possibilities that he was able to induce the Foundation to make an appropriation for two years' work on the site.

This project met with immediate success, for on 16 October 1927, Dr Birger Bohlin found a human lower molar tooth in the deposit at Chou Kou Tien, where Dr Zdansky found the teeth reported on 22 October 1926. On 2 December 1927, Dr Davidson Black announced to the Geological Society of China this important discovery and his courageous decision to use it as evidence for the creation of a new genus and species of the Human Family.

On the suggestion of Dr A. W. Grabau, Professor of Palaeontology in the National University of Peking, he called it *Sinanthropus pekinensis*. The age of the deposits in which the fossils were found was thought at this time to be Upper Pliocene; but a more careful sifting of the evidence provided by the associated mammals subsequently led the geologists to decide that the real age was Lower Quaternary (very early Pleistocene). Professor Schlosser in 1903 and all subsequent writers for the next quarter of a century believed that fossils found in deposits earlier than the loess of the Chili plain were Pliocene. But investigations during the season 1927-28, fully recorded in the exhaustive report published by Père Teilhard de Chardin and Dr C. C. Young (*Bulletin of the Geological Society of China*, 1929, p. 173), established the age of the fossils as Early Pleistocene.

Dr Davidson Black claimed that the morphology and the proportions of the tooth left no doubt either of its human origin or of the fact that it is generically distinct from all other known human types. He came to the conclusion that its original possessor was a child corresponding in age to that attained by modern children at eight years, and presumed that it was derived from the same jaw as the lower premolar tooth whose discovery was reported in 1926 by Dr Zdansky.

In 1903 Professor Schlosser had emphasized the fact that while the tooth he was describing on that occasion differed from those of other known human and simian remains, morphologically it was

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essentially human in type, but revealed certain remarkable points of similarity to one of the fossil apes from the Siwalik Hills. The tooth found in 1927, like that of 1903, was partly embedded in a stony matrix which, in addition to the condition of mineralization of the tooth itself, corroborated the extreme age of the specimen.

In a monograph published in 1927 (*Palaeontologia Sinica*, series D, vol. 7) Dr Davidson Black gave a detailed description of the tooth found by Dr Bohlin in that year. He called attention to its distinctive characters, and contrasted it with a series of primitive human and simian teeth. He provides ample justification for his action in creating a new genus and species of the human family. He shows how every character of the tooth, the form and proportions of the crown, the peculiarities of the roots and the size and form of the pulp cavity all agree in conferring upon *Sinanthropus* a distinctive position intermediate between man and ape. Moreover he shows how generalized are the characters of the tooth, so that it enables us to understand how the peculiarities revealed in the later types of the human family have been derived from this extremely primitive type by differentiation of some of the potentialities so clearly manifest in this interesting tooth. He showed also with great clearness how the pattern of the crown showed a distinct likeness to that revealed in the fossil ape *Dryopithecus*.

In spite of the very thorough and complete demonstration of the fact that the tooth of *Sinanthropus* was of early Pleistocene age and so definitely different from that of all other known human teeth (an extremely generalized human type presenting obvious analogies to the conditions found in the fossil apes which most nearly conform to the human type) Dr Black's action in creating a new genus did not meet with any widespread support. A year later, however, the discovery made by Dr Birger Behlin, working in conjunction with Dr C. C. Young and Mr W. C. Pei, of fragments of two jaws and braincases, provided evidence which confirmed the validity of the genus founded in 1927. The tooth upon which Dr Black based his definition of the new genus conformed in character to the two teeth whose discovery was announced in 1926, as well as to the tooth described by Schlosser in 1903, and there can be no doubt that these four teeth all belong to *Sinanthropus*. One of the teeth found by Dr Zdansky in 1926 probably came from the same jaw as the type-specimen found in 1927. The two jaws found in 1928 contained a number of teeth conforming to the same characteristic morphological type as that found in 1927. Both jaw fragments, one of a child and the other of an adult, display very

PLATE II



FIG. 3. The left side of the braincase found 2 December 1929



FIG. 4. Posterior aspect of the braincase

PLATE III



FIG. 5. The lower surface of the braincase.

PLATE IV



FIG. 6. The upper aspect of the skull with part of the roof removed to show the exceptional thickness of the skull and the appearance of the natural limestone cast of the brain cavity.



FIG. 7. The same specimen seen from the right side to display in an even more emphatic way the thickness of the skull and the diminutive size of the space for the brain. The tooth of a cave bear is imbedded in the limestone cast just behind the edge of the frontal bone.

PLATE V



FIG. 6. A group of Chinese boys sorting the material from the cave in the valley search for flint implements.

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significant peculiarities in the chin region. The oblique slope of the anterior surface is comparable only to that of anthropoid apes and the Piltdown jaw; and a peculiar conformation of the lingual aspect of the jaw is analogous to, though not exactly identical with, the peculiarities of the jaw found at Piltdown in 1912, which has been a subject of the liveliest controversy ever since.

While the finding of this peculiar ape-like type of jaw in association with fragments of braincases, which are unquestionably human, provides corroboration of the justice of regarding the tooth of 1927 as a new genus, it also affords evidence which cannot be ignored in support of the validity of regarding the jaw found at Piltdown as part of the same human individual whose broken skull was also found alongside it. The features of the jaws of *Sinanthropus* seem to suggest the possibility that the fossil man of China might be more nearly akin to the early Pleistocene man of Piltdown than to the Ape-man of Java. It would however, be more accurate to say that, as nothing whatever is known of the type of jaw of *Pithecanthropus*, the only human jaw susceptible of comparison with the Peking jaws was that found at Piltdown. The contrast between the teeth of *Pithecanthropus* and those of *Sinanthropus* suggest that there must have been a considerable contrast between the jaws of those two primitive genera. In 1929 however, the finding of an almost complete braincase of *Sinanthropus* by Mr W. C. Pei revealed a type of skull which, while it was still embedded in the hard matrix of travertine (involving the base and a greater part of the sides of the skull) seemed to be much more nearly akin to the skull of *Pithecanthropus* than to that of *Eoanthropus*. While there is this obtrusive general resemblance to *Pithecanthropus*, however, it is important not to minimize the peculiarly significant expansion of the frontal and parietal parts of the braincase which so definitely distinguishes it from the skull of *Pithecanthropus*. There can be no doubt, however, that just as the finding of the jaws in 1928 suggested the possibility of some kinship with the Piltdown man, the skull found in 1929 caused opinion to swing in the other direction and suggested a nearer kinship with *Pithecanthropus*. In 1930, however, when after four months of intensive work, Professor Davidson Black completely liberated the skull from the matrix of travertine, the braincase was revealed with a curious blend of characters hitherto regarded as distinctive, some of them of *Pithecanthropus* and others of *Eoanthropus*. The combination in the same specimen of peculiar characters hitherto regarded as incompatible one with the other was not only important as a revelation of the extremely

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primitive and generalized qualities of *Sinanthropus*, but, what was even more important, it formed a link between the other two genera of early Pleistocene men, concerning the validity and significance of which there had been so much doubt and suspicion. Hence the skull found in 1929 not only established on a firm foundation our knowledge of primitive man to which it gave coherence and in which it inspired confidence, but in addition it revealed a type which was so primitive as to enable us to visualize the characters of the common ancestor of all three genera.

If the size and form of the eyebrow-ridges (fig. 3) and the median frontal crest (fig. 6) suggest a kinship with *Pithecanthropus*, the form of the posterior aspect of the skull (fig. 4) presents a marked contrast to the Java fossil and a definite likeness to *Eoanthropus*.

As long ago as 1903 Professor Schlosser defined the contrast between the tooth he was discussing and those of *Pithecanthropus*, differences which have been still further emphasized by Professor Davidson Black with the fuller material at his disposal.

The braincase of *Sinanthropus* differs from that of *Pithecanthropus* not only in the matter of the local expansions of the frontal and parietal areas, but also in its general form and the characters of its cranial bones. For the exceptional thickness of the cranium (figs. 6 and 7), and the peculiar architecture of the bones reproduce conditions which hitherto have been regarded as distinctive of *Eoanthropus*. The form of the surprisingly small cranial cavity presents a significant contrast to that of *Pithecanthropus*, being narrower and loftier, and free from the grosser type of distortion revealed in the broad flat endocranial cast of *Pithecanthropus*. The braincase of *Sinanthropus* reveals many features which are unknown either in the Ape-man of Java or in the Piltown skull, and throws a great deal of light upon the characters of the common ancestor of the human family, from which all these genera had been derived. One of the most striking illustrations of this fact is the peculiar form of the mastoid region of the temporal bone, recalling as it does the condition found in the new born child and in the adult anthropoid apes. For it lacks that salient character which is so distinctive of the adult human being of other genera.

The skull found in 1929 is that of a young adult corresponding in the state of its development with the condition found in modern human skulls at about eighteen years of age. When the skull was first examined Professor Davidson Black was impressed by the grace of its contours in comparison with the uncouth outlines of *Pithecanthropus*,

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and suggested the possibility that it might be female, with the reservation, of course, that the evidence at our disposal regarding this hitherto unknown type of being was altogether inadequate for any definite decision upon this matter. Its grace, however, may be due to its primitiveness and the fact that it is free from those secondary distortions which give the degenerate *Pithecanthropus* its bizarre character. The discovery of another braincase was made in July 1930 by recovering from material brought in from the Chou Kou Tien cave (in October 1929), a series of fragments which naturally articulated one with the other to form the greater part of the calvaria. This discovery of a skull of another young adult of approximately the same age as the one found in December 1929 revealed a more lightly built skull with small eyebrow ridges, a less prominent forehead and less obtrusive parietal eminences, which both Professor Davidson Black and I consider to be probably of different sex from the other skull. It seems not unlikely, however, that the skull reported in July 1930 may prove to be female and the other skull (found on 2 December 1929) male; but at present neither opinion can be said to be based upon any really decisive evidence. The discovery of a second skull enormously enhances the value of the information we have because it permits comparisons to be made.

In the material found in 1928 there are remains (fig. 5) of two other broken skulls (still embedded in travertine), which provide other important comparative material for studying the range of variation of the skulls.

Whether or not the Peking man was older than the fossils found in Java and Sussex, there was no doubt that he represented a more primitive type. His characters were more generalized, some of them distinctly reminiscent of man's simian ancestry and others strangely foreshadowing the qualities hitherto regarded as distinctive of *Homo sapiens*. In other words, *Sinanthropus* enables us to picture the qualities of the original members of the human family by revealing a type which, though human, was curiously ape-like, and obviously close to the main line of descent of modern man.

The work of investigation and of recording the results of the work has been carried on with exceptional thoroughness and imaginative insight. It was hoped by Dr Davidson Black that the prompt publication of bulletins and the wide circulation of manuscript reports even before they were published, would have prevented the development of such misunderstandings as had marred the discussions of the fossil

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remains of man in the past. In spite of these precautions, eminent palaeontologists in Germany and France are already claiming that the Peking man belongs to the genus *Pithecanthropus*; others in America have suggested that he is merely a Far Eastern example of Neanderthal Man; and others again that the Chinese fossils were not human.

Having just made a careful examination of the actual fossils in Peking and compared them with human and simian skulls, and the casts of the other kinds of extinct members of the human family, I can confidently support the opinion of Dr Davidson Black that *Sinanthropus* is an undoubted member of the human family, who reveals in every part of his skull and teeth evidence to distinguish him from all other known human types, and to justify the separate generic rank suggested to define his status.

The Absence of Implements

In studying the remains of early man it is always a matter of particular importance to search for the tools and implements which might bring the human beings into association with some definite phase of industry. It is a very significant phenomenon that at Chou Kou Tien, in spite of the most careful search in the caves during the last three years, no trace whatever of implements of any sort has been found. When it is considered how vast a quantity of fossil remains has been found and the scrupulous care which has been exercised in the search, it must be something more than a mere coincidence that no trace of any stone implements has been found. Not only have the various excavators been on the constant look out for such artefacts (in particular Father Teilhard has been looking for archaeological evidence), but after the material was removed from the caves, a group of boys was put on to sift the material once more to make quite certain that no such evidence has been overlooked by the geological explorers. It must not be forgotten, however, that Dr Andersson in 1921 found pieces of quartz in association with the fossil bones, and that in the later stages of the excavation Mr Pei found further examples of this alien material. Those who have been searching in vain for evidence of human craftsmanship on this site are being forced to the conclusion that the Peking Man was in such an early phase of development as not yet to have begun to shape implements of stone for the ordinary needs of his daily life.

PLATE I



FIG. 2

FIG. 3

EARLY IRON AGE COINS (2 about 4) SHOWING TYPES OF HORSES

The Uffington White Horse

by STUART PIGGOTT

THE White Horses cut in the turf of the Wessex Downs are familiar to most people who have wandered over the hills of western England, and many have no doubt paused to look at one or another of them and perhaps to 'hazard a wide solution' as to its antiquity or origin. But of the fifteen White Horses in Wiltshire and the adjoining counties, only one can be attributed to a date before the eighteenth century. This, the sire of them all, is cut on the north slope of the Berkshire Downs, above the village of Uffington, and gives its name to the fertile plain of mid-Berkshire—the Vale of the White Horse. Camden in writing of the Vale was wholly contemptuous of the Horse, saying that the inhabitants named the district 'I wotte not from what shape of a white horse, imagined to appeare in a whitish chalky hill'. But despite Camden's scepticism, the Uffington White Horse very definitely exists, and has been cited as a landmark since the eleventh century, when the cartulary of Abingdon abbey records that one Godfric was possessed of Sparsholt *juxta locum qui vulgo mons Albi Equi nuncupatur*. In the thirteenth and fourteenth centuries the Horse is several times mentioned in connexion with the tenure of lands near it. Mr T. H. Ravenhill has recently drawn attention to an early fourteenth century manuscript in the library of Corpus Christi College, Cambridge, entitled *Tractatus de mirabilibus Britanniae*, in which the White Horse is given second place among the Marvels, Stonehenge being first.¹

Apart from these references, the Horse suffered neglect until 1738, when Dr Francis Wise wrote his *Letter to Dr Mead concerning some Antiquities in Berkshire*. In this he advanced the theory which for long held the field (although unsupported by any archaeological evidence), that the Horse was cut in the turf as a memorial of Alfred's great victory of Ashdown in 871. His pamphlet was answered in 1740 by 'Philalethes Rusticus' in an effusion with the delightful

¹ T. H. Ravenhill, *The Rollright Stones*. Little Rollright, 1926.

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title of *The Impertinence and Imposture of Modern Antiquaries Display'd*. An anonymous reply to this in 1741 made no contribution to the subject, and, with the exception of a note by W. H. Thoms in *Archaeologia*, xxxi, the matter was left in quiescence until the publication in 1858 of Thomas Hughes' famous *Scouring of the White Horse*, in which the Saxon origin of the Horse was again set out. About 1890 Rev. W. C. Plenderleath published his most valuable little book on *The White Horses of the West of England*, from which much of the preceding information is derived. In this book he put forward arguments for an Early Iron Age date for the Horse. Finally, in 1926, Sir Flinders Petrie published for the first time an accurate plan of the Horse in *The Hill Figures of England*, for which all students must be immensely grateful.² Certain points in his description cannot however pass altogether unchallenged, and it is the purpose of this present paper critically to re-examine the details of the style of workmanship of the Horse, its associations and its parallels, with a view to determine its date, the culture to which it belonged and the reasons for its making.

The Horse is constructed by clearing down to the solid chalk over the whole area of body, legs and head, and not by digging a trench to show a white outline only. In this respect it differs from the other turf-figures of the Wilmington Long Man and the Cerne Abbas Giant, but compares with the Bledlow and Whiteleaf Crosses. As it is cut on the slope of the hill, the chalk has been exposed more as a terrace than as a wide ditch; there being a drop down into the area on the uphill side only. Some parts are banked up, notably the end of the tail and of one hind leg, while the eye is a levelled platform on the slope. The left-hand 'jaw' runs as a chalky trench on top of a raised causeway about a foot high at its lower end, to make the line more level. At several points, especially along the body and neck, there is clear evidence that the bare chalk areas have been originally wider, as shown by the hollows of the turf. The total length of the Horse is some 360 feet, its maximum height 130 feet.

It is obvious that a relatively short period of neglect would ensure the disappearance of the Horse beneath encroaching weeds and turf, as was almost the case with the Wilmington Long Man, and has probably been the case with many similar turf-figures now vanished. But the local inhabitants have until recent times 'scoured' the Horse and cleaned the bared chalk area at irregular intervals, the occasion

²The plan of the Horse (fig. 1) is based on that on plate vi of *The Hill Figures*.

The White Horse of Uffington, Berks.

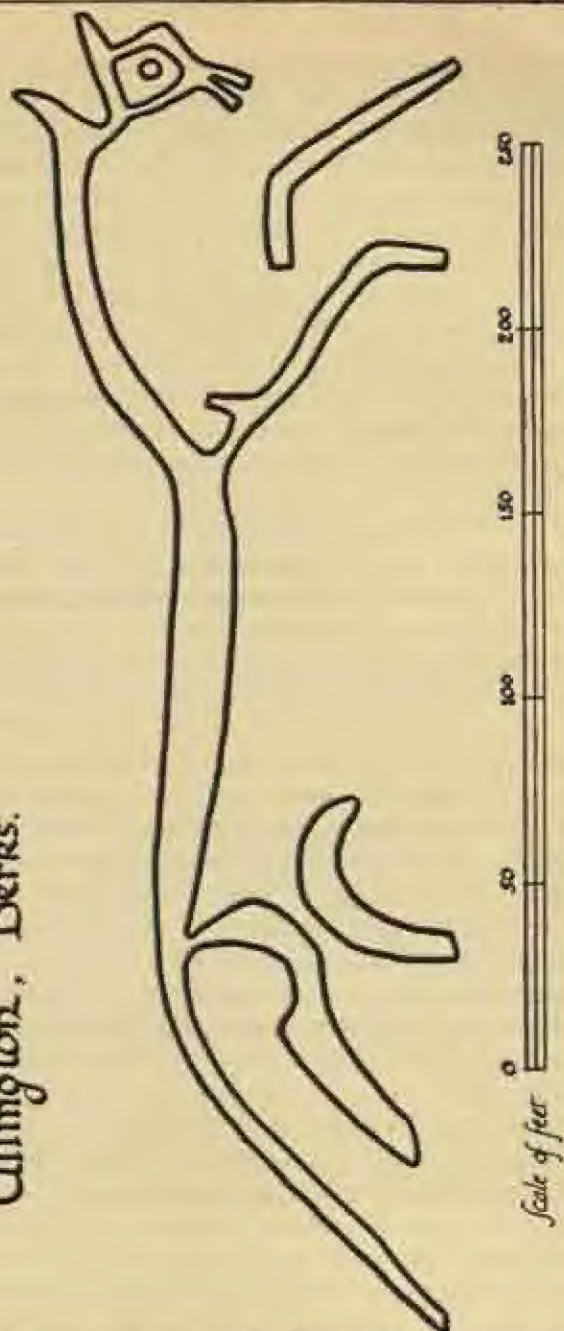


FIG. 1. PLAN OF THE BERKSHIRE WHITE HORSE,
after Sir Flinders Petrie

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being one of great festivities and a fair held on the hilltop—a festival which no doubt represents an ancient ritual in connexion with the Horse. There are records of scourings from 1755 onwards, until the last in 1857 so vividly described by Thomas Hughes. Now, with the decline of local interest, it has been left for the Office of Works to take charge of the Horse under the Ancient Monuments Act; festivities will be left to the Inspector of Monuments and weed-killer replaces Wombwell's Menagerie on the hill.

The Horse is on a steeply sloping hillside at a height of 500 feet, the slope facing westnorthwest. To the south, on the top of the hill, is the hill-fort known as Uffington Castle, consisting of an irregular oval area defended by a strong bank and ditch, with a slight counterscarp bank. The western side is flattened and contains the single incurved entrance.

Between the Horse and the Castle, on the slope of the hill, is an oval mound, 77 by 40 feet, with its long axis northeast-southwest. It is from two feet six inches to three feet high, and has a central crater from excavation. A ditch remains on the south and west. This 'pillow-mound' would appear to be that opened by Martin Atkins in 1857, and which was found to contain forty-six Roman burials.²

Below the Horse, on the sides of the 'declivity called by the country folk the Manger', but nowhere on the steepest slope, are slight lynchet banks implying cultivation of the slopes for no very long period, since on a slope such as this a lynchet accumulates rapidly. One bank shown on Sir Flinders Petrie's plan of the earthworks around the Horse just below the 600-foot level may be an accidental or natural terracing. It is very slight and not quite similar to the other banks.

On a projecting spur to the north is a natural hillock known as Dragon's Hill, which has been trimmed and flattened on top. Some soil has also been added to the south side. Martin Atkins found Roman coins and pottery on or about it, but it is clearly almost entirely natural, and may have been adapted as a medieval castle mound.

The Uffington Horse differs from all the other White Horses in its extraordinary and striking conventionalized style, so unlike modern conceptions of the animal. When considering the date of any artifact, although many criteria may be employed, the two most important are associations and style of workmanship. The former can only

² *Wessex from the Air*, p. 19.

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be used in exceptional conditions—for instance, in an undisturbed grave-group a pot of novel form may be dated by an axe of known type, or a ditch cutting through a barrow would be later than the barrow. The White Horse has however no such inter-relation with objects of known date, and while the proximity of sites of a certain period may be suggestive when backed by other evidence, they cannot be used as arguments for date by themselves. We are left then with stylistic grounds alone for suggesting a date for the Horse. It is a piece of work designed in a distinctive and conventionalized form, and we know it was in existence in early medieval times—beyond this there is no direct evidence.

The main features of the Horse are its attenuated and disjointed shape and in fact its general lack of resemblance to the animal after which it is named. Its peculiar shape has led certain speculative writers to suggest that it is no horse, but a dragon (or even an ichthyosaurus !), the adjacent Dragon's Hill being called in as witness. Dragon's Hill, as we shall see later, may owe its name to another legend, but meanwhile these writers have not considered one strong proof of the animal's equine ancestry, in that an animal so unlike ordinary representations of a horse should have been called the White Horse since the eleventh century. Had there been no firmly rooted tradition that this strange figure represented a horse, it is quite probable that it might have been named by the local people after anything it suggested to their imagination. And when, seeking for parallels, we find undoubted horses represented in an analogous style at a certain period of prehistoric art in England, we can at once dismiss the dragon theory.

As well as the disjointed and elongated form of its limbs and body, the head of the Horse is of peculiar shape. The ears are large, and the v formed between them cuts deeply into the back of the head. The eye is represented by a round patch of chalk about five feet across, while the greater part of the face is untouched turf bordered by a chalk trench, giving an 'outline' effect unlike the 'solid' treatment of the rest of the body. But the most striking feature of the head is the jaws, which project downwards as two narrow divergent cuttings, not unlike the beak of a bird.

A horse with just such attenuated body, disjointed limbs and peculiar head is represented on a large and well-known series of gold and silver coins minted in England towards the end of the Early Iron Age (La Tène III) in imitation of a gold stater of Philip of Macedon

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(died 336 B.C.); the type passing from Gaul to Britain about 100 B.C.* On the reverse of the original coin is a chariot drawn by two horses, urged on by a charioteer, with the name Φαίππος in the exergue. By a process of continual copying from copies the chariot degenerates on the British examples to a wheel (which in itself was probably a sacred symbol among the Gauls), the charioteer to a group of pellets and the horse (in the latest stages) to a jumble of dumb-bells and crescents. In the intermediate examples we have an animal in all essentials like the White Horse, although the body (probably to suit the exigencies of a circular design) is more curved. But to say that the horse on the coins 'is always a short, tubby beast', as Sir Flinders Petrie has stated, is incorrect, and in any case the resemblance between it and the Uffington figure is still further borne out by the characteristic details of the treatment of the head described above. On a coin showing a very degenerate beast (fig. 2) the narrow beak-like jaws are clearly shown, joined by a cross-bar (? a bit) and the treatment of the body, with its detached limbs, is quite comparable with the Uffington Horse. Another coin, (fig. 3), more naturalistic as to the body, shows the head treated in outline with a large space around the eye, and is nearer in type to the Aylesford horses.

The coins are not our sole evidence however for Early Iron Age representations of the horse. On the two famous bronze-mounted buckets from Marlborough and Aylesford (figs. 4, 6, 7) the horse is again represented as a decorative motif, and although the resemblance between these animals and the White Horse is not so striking as that between it and those on the coins, they are all nevertheless recognizable as products of the same artistic tradition.

Art in England at the close of the Early Iron Age was essentially decorative and non-representational. In its sense of the balance of abstract designs and its triumphant use of curves of faultless certainty and matchless beauty it is probably unequalled. Whether the decoration is on a wooden tub or a cooking pot from Glastonbury, or on such a *tour de force* of metal work as the Battersea shield or the Birdlip mirror, the even flow of the curved elements of the design and their combination into a harmonious whole show an exquisite feeling for pattern, and a complete accord between the decoration and the object decorated. The artist of the period saw in the horse a symbol to be incorporated in a design, and took what liberties he thought fit to make it in accordance

* First pointed out by Sir John Evans, *Coins of Ancient Britons*, 1864, p. 21 ff.

PLATE II



FIG. 4. THE MARLBOROUGH BUCKET, DEVIZES MUSEUM
By permission of the Wiltshire Archaeological Society



FIG. 5. ROMANO-BRITISH BRONZE HORSE FROM SILCHESTER, READING MUSEUM

PLATE III



FIG. 6. HORSES ON THE MARLBOROUGH BUCKET
By permission of the Wiltshire Archaeological Society



FIG. 7. HORSES ON THE AYLESFORD BUCKET, BRITISH MUSEUM

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with his decorative curves. Consequently the opposed beasts on the Aylesford bucket have bodies based upon the s-shaped thick-ended scroll which forms the basis of design in another panel on the same vessel, while their tails are bifid and doubly curved. The heads have the jaws curved outwards and thickened, and the ears are thickened s-curves, but the large eye remains and in its essentials it is the same head as that at Uffington and on the coins.

The horses on the Marlborough bucket (which are directly comparable in style to some from La Tène itself) are also conventionalized, although their jaws have been converted into a single spiral appendage not unlike a grotesque trunk. The bodies are elongated and s-shaped, and the mane is a prominent feature.

This conventionalization of animal forms can be paralleled in medieval heraldry. The heraldic lion is a monster unlike anything that ever lived, and indeed with his elongated body and stylized legs he is by no means unlike the White Horse. But he fills a space admirably; he can be arranged to fit a pattern and is a satisfying piece of decoration. So with the Early Iron Age horses. In both cases design was the all important factor in the artist's mind. Landseer might paint more leonine lions than a medieval herald, or Morland more equine horses than the Aylesford beasts, but perhaps they could neither of them have made so good a pattern.

It has often been remarked that the native British tradition in art survived in certain products of the Roman occupation of this island, notably in the Castor ware and in some enamelled brooches. The hunting scenes on the pots of Castor ware are quite in the tradition of the coins, and when we look at the well-known cup from Colchester with a chariot race upon it, we see the coin conventions repeated again—a wheel to represent the chariot, and the horses, although not so disjointed as on some coins, yet still executed in the British manner.

A small bronze figure of a horse from Silchester (fig. 5) must certainly be the work of a British craftsman who might almost have had the White Horse in mind, so alike are they in general conception. The Silchester figure is more naturalistic as to the head, but the eye is shown by a primitive 'ring and dot', and the treatment of the body and legs is completely non-Roman in feeling. Although improved by breeding in a more sophisticated stud, it still shows clear traces of the old stock.

On stylistic grounds then we may date the White Horse as not earlier than La Tène III. It is unlikely that a work on such a scale

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would be constructed during the Roman occupation, so we may suggest a date within the first century B.C.

One feels that there ought to be some relationship between the Horse and the hill-fort above it, and Mr Crawford has suggested that it was the tribal emblem of the inhabitants of the camp.⁴ Mr C. F. C. Hawkes tells me that there is evidence to show that Uffington Castle was constructed in Hallstatt-La Tène I times, but surface finds near include two small enamels of typical late La Tène style.

A feature of the construction of Uffington Castle, namely the existence of a facing of sarsens to its chalk ramparts, suggests comparison with Alfred's Castle near by, a small earthwork with similarly constructed ramparts. Surface finds of pottery from the latter site suggest a Hallstatt-La Tène I earthwork occupied again in La Tène III, and Uffington Castle may have had a similar history.

A horse as a motif of decoration on a coin is understandable, but one naturally asks why any people should cut out a horse more than a hundred yards long on the side of a conspicuous hill. While freely admitting that there may be a tendency to ascribe anything unusual to religious purposes, (especially when little is known of the religion in question), it seems hard to suggest any other origin for the Uffington Horse. Mr Crawford has suggested that it was a totem, and such a conspicuous figure must have been a cult-object for a large area. What we do know of Gaulish and Celtic deities indicates the existence of a considerable element of animal worship, and in England especially of the cult of the boar—the horned man Cernunnos, the swine-god Moccus and the bull-god Tarvos Trigaranus are further examples. The goddess Epona appears to have been a minor deity represented as riding on a horse, and it has been suggested that the original Epona was a divine mare, the woman being a later sophistication.⁵ While not going so far as to identify the Uffington Horse with Epona her existence as a deity is a pointer in the right direction.

Local legends and folklore often convey a useful hint to the archaeologist, and although the Horse itself appears to have no legends about it (other than those of its association with Alfred, doubtless dating from the eighteenth century), local tradition asserts that Dragon's Hill is so called because St. George killed the Dragon on its summit,

⁴ ANTIQUITY, 1929, III, 281.

⁵ Rice Holmes, *Ancient Britain*, p. 284 n.5, quoting de Jubainville.

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and further that no grass will grow where the blood was spilt. This association of a spot so near the Horse with St. George is of peculiar interest and importance. There is evidence that that popular saint replaced, on the introduction of Christianity, a deity or demigod who was either closely associated with horses or actually a horse-god. This substitution of a Christian saint for a pagan god is of course by no means uncommon, and as the early missionaries to England had definite instructions to reconsecrate the pagan shrines to Christianity,⁶ it is only to be expected that many a local deity would be replaced by an appropriate and convenient saint, or indeed might become a saint himself. The innumerable holy wells in the West of England and in Wales point to converted water-gods who exchanged their ancient and dubious habits for a halo and a ready-made and edifying history. At one of these wells, the well of St. George at Llan San Sior, near Abergele, North Wales, horses were sacrificed until quite recent times. The custom was for the rich of the district to offer one horse, and then all diseased horses were brought to the well and sprinkled with the water, while an appropriate blessing was pronounced.⁷ The fine springs just below the Manger and Dragon's Hill may have been similarly associated with the name of St. George.

The legend of Dragon's Hill may thus preserve a valuable link between the White Horse and this shadowy deity which the popular St. George legends suggest.

In English folklore there are abundant traces of rites centring round animal gods: for example, the ritual sacrifice of a man disguised as a ram was enacted in a crude drama in Derbyshire until a few years ago,⁸ while the man masquerading as a horned beast has a distinguished history which may begin with the palaeolithic sorcerer and end with such odds and ends of customs as the horned mask of Christmas mummers in Dorset. The ancient horse-god may now caper about as the Cornish and Somerset hobby-horse of the May-day festivities and the Hooden Horse of Thanet, or be degraded to the Christmastide buffoonery of the South Wales Mari Lwyd.⁹ In Derbyshire 'The

⁶ See for instance the letter from Pope Gregory to the Abbot Mellitus, A.D. 601, quoted by Bede. (Bohn's edition, pp. 55-6).

⁷ T. Gwyn Jones, *Welsh Folklore and Folk Custom*, (Methuen, 1930), p. 112, quoting Pennant's *Tours* (late 18th c.)

⁸ *Derbyshire Arch. and Nat. Hist. Soc.* XXIX, 31-42.

⁹ See *Guide to Welsh Bygones*. Nat. Mus. Wales, pp. 62-4.

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Old Horse' was the chief actor in a drama in which he was rejuvenated, while in Yorkshire a similarly disguised person went round at Christmas singing a song.

Whether the St. George who is killed and resurrected in the well-known Christmas mummers' plays should be connected with the horse-god can only at present be suggested with all reserve, but the Mari Lwyd (the South Wales equivalent of the Mummers) and the Derbyshire play are suspicious if nothing more.

These survivals, slight as they are, may serve to show that a horse-deity has left traces in existing folklore, and it is most probable that the seasonal 'scouring' with its attendant festivities on the hill must represent an ancient ceremony, as the maypole dancing above the Cerne Abbas Giant. I have elsewhere¹⁰ suggested links between this figure and certain medieval legends and modern folklore elements.

But any connexions of the Horse with ancient cults or modern folklore must at the best be tentative guesses, and from study of the available facts we can only safely draw one conclusion; that the Horse is a monument constructed at the end of the Early Iron Age, probably in the first century B.C. Beyond this we can be sure of nothing, and in many respects the White Horse still remains a mystery.

¹⁰ *Folk-Lore*, XL, 193-95.

Skara Brae: a 'Stone Age' Village in Orkney

by V. GORDON CHILDE

PERHAPS the greatest handicap in trying to visualize life in prehistoric Britain is the exiguity of domestic remains, especially on the architectural side. The dwellings themselves were normally of perishable materials so that only their outlines survive, and of their furniture not even that can be said. An exceptional conjunction of circumstances has, however, preserved in Orkney a whole village belonging to a belated Stone Age, with its huts and their fixtures reasonably complete. The huts were built of stone; they had been packed in refuse and were eventually buried by sand, and so the walls still stand to a height of from 8 to 9 feet. The timber shortage prevailing on the wind-swept isle necessitated the translation into stone, and therewith the immortalization of articles such as beds, usually manufactured of ephemeral wood. The village is indeed a highly specialized adaptation to a particular environment so that deductions from it can only be generalized with reservations. Again, though the villagers used only stone and bone tools, they probably lived at a time when bronze, and perhaps even iron, were current in less isolated localities. Still we get here so vivid a picture of Stone Age life in our islands that a summary of the results of four seasons' work may be of interest even to the general reader.

The village in question is situated on—or to speak more accurately constitutes—Skara Brae, a low hillock rising some 37 feet above O.D. at the south corner of the Bay of Skail, on the exposed west coast of Orkney Mainland. The villagers lived by rearing sheep and cattle on the well-grassed sandy flats behind the bay, collecting limpets and other shell-fish, catching wild-fowl, and hunting the red deer which, with the wild boar, must still have survived in sheltered groves further inland. So much can be said from the bones, shells and antlers found on the site. On the other hand no grains, and only one object at all reminiscent of a quern, have been discovered, so that it is unlikely that agriculture was practised. Pots were manufactured and flint and stone worked at the site but there are no indications of

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weaving. Clothing must have been made from skins, for the dressing and piercing of which many of the bone implements from the village are well adapted. But, as stated already, the importance of Skara Brae is primarily its revelation of primitive 'town-planning' and domestic architecture.

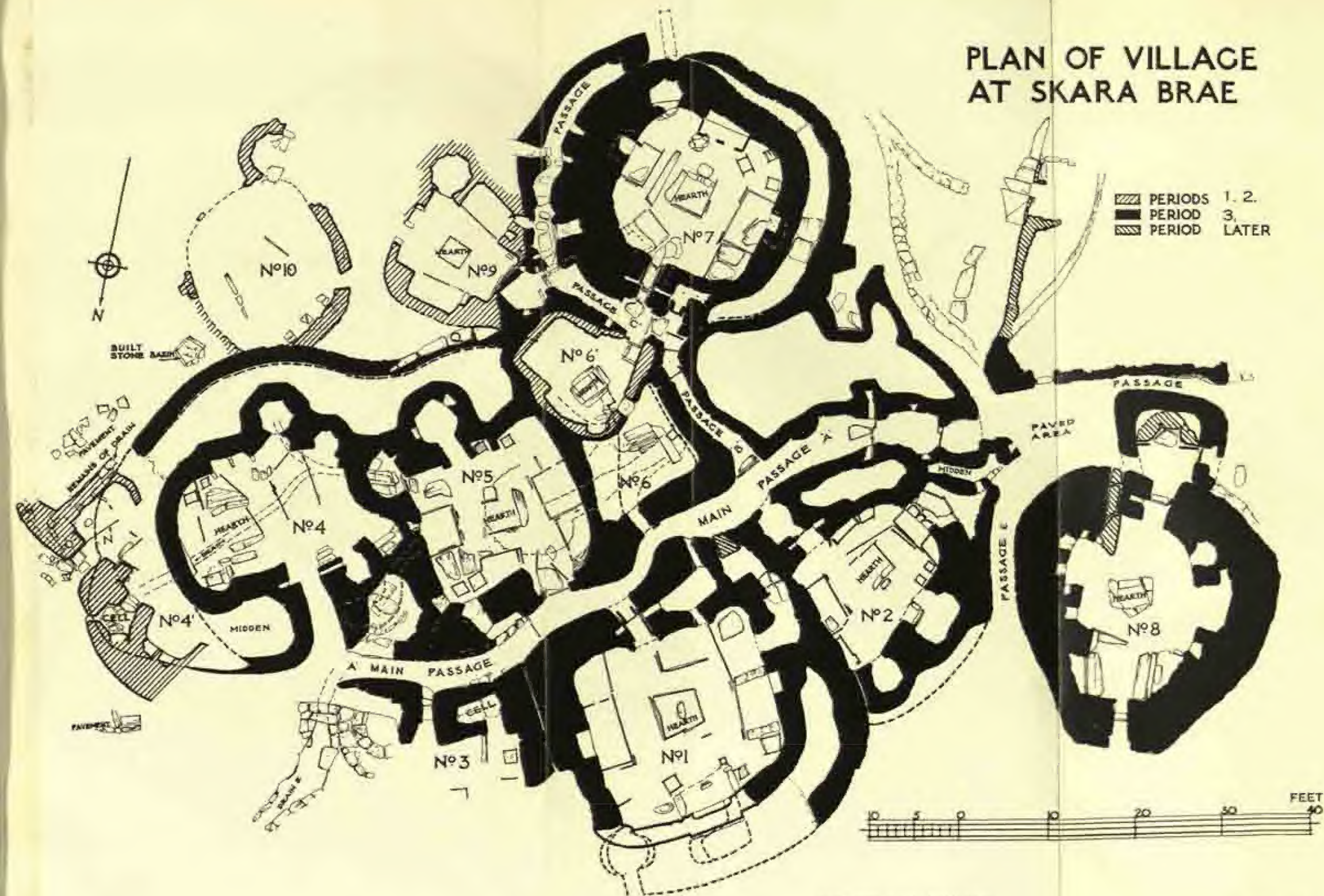
In its final form the village consisted of two quarters—a residential complex and a sort of industrial annex to the west. The former is an agglomeration of stone huts connected by covered passages and all partially buried in a huge midden heap. The northern and eastern sides of this complex have been denuded to an incalculable extent by marine erosion so that the whole is no longer complete. What survives is a series of five (originally six) huts grouped on either side of the winding passage (A on the plan) that runs roughly east and west, with a seventh hut to the south at a distinctly lower level and connected with the rest by a branch passage (B).

The materials for building the huts and passages lay near at hand. The shore is littered with flat slabs of Caithness flagstone, quarried out by the waves and dressed by the same natural agency to a smooth straight edge on at least one side. If laid double in horizontal courses, as in a modern dyke, such slabs give a wall with two splendid faces.

The huts themselves approximate in plan to rectangles with rounded corners, varying in size from 21 feet by 20 to 16 feet by 14, and are surrounded with double walls. Generally each hut was protected in addition by a 'casing wall', only one course thick and faced on the outside alone, the space between the casing wall and the hut wall proper being filled with a core of rubble or refuse. A few feet from the floor the successive courses of the inner wall begin to oversail one another, particularly in the corners, as if the whole hut were to be roofed by a corbelled vault. But in the best preserved hut (no. 7, plate 1) the overhang at the wall centre is just over 2 feet at 9 feet 6 inches from the floor and only 2 feet 4 inches in the corner at the same height. At this rate the hut, which is 17 feet wide, would have been an incredibly lofty structure before the walls converged, either completely or so as to leave only a narrow smokehole. A tent-like erection of skins, supported by whale-bone rafters, is a possible alternative; the holes high up in the wall of hut 7 do look suspiciously like beam sockets.

The sole entrance to the hut was a doorway some 3 feet high and less than 2 feet wide running tunnel-like through the thick walls. A stone bar (actually found in place in hut 4) sliding in a channel in the

PLAN OF VILLAGE AT SKARA BRAE



By permission of H.M. Office of Works

facing p. 48

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wall secured the door, which was presumably a stone slab. The same doorway was probably the sole source of ventilation. Only in hut 5 is there any trace of a window, and it is uncertain whether this opened onto more than a covered passage.

To each hut one or more beehive cells, built in the thickness of the walls, were attached. In huts 1, 4 and 5 at least one such cell was served by a regular built drain running under the hut floor and roofed with slabs. The cells in question may therefore be plausibly regarded as privies, however surprising such modernity in sanitation may seem in a village so squalid in other respects. At the same time, some cells were used as treasure-houses : a hoard of some 3000 beads and pendants was found in the deepest cell off hut 1 and a smaller group of fine trinkets in the cell of 7 ; a cell attached to hut 4 contained a finely carved stone ball and similar valuable objects.

The furniture of all huts is very similar and marvellously preserved. In the centre of the floor is a square hearth enclosed by four kerb-stones and filled with red peat-ash. Immediately behind are traces of an upright stone or pillar. Against the walls on either side of the fire-place stand the beds, enclosures formed by big slabs on edge kept in place by stone wedges driven into the floor. At the head and foot stand pillar-like slabs (now mostly broken) recalling bed-posts, and perhaps really designed to support a canopy of skins. A third enclosure, of similar plan but smaller and fenced by lower slabs, stands against the front wall to the left of the door. This may have been the children's bed.

These sleeping-places, measuring from 7 feet by 3 feet 6 inches to 5 feet by 3 feet, are all relatively wide and short just like peasants' bedsteads in Scandinavia today. That does not of course imply that their occupants were of low stature ; Norwegians and Swedes are notoriously tall. The floors of the beds were generally in a filthy state, littered with gnawed bones and even excrement, but beads and other valuables have also been found on them. Of course the floor must have been covered with a couch of ferns or heather which masked the refuse and served as a hiding place for treasures, as mattresses do today. Members of the family used to sit by day on the edge of the bed's front partition-slab, which is often noticeably worn save at the ends where the ' bed-posts ' protected it, and articles they were making or using are frequently to be met on the floor between this improvised seat and the fire. Recessed into the wall above each bed are one or two cupboards or ambries to serve as keeping places for personal

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possessions. Similar recesses above the sleeping places were thus used by dairymaids occupying beehive shielings in the Hebrides last century.¹

The right-hand bed is always the larger. The fore corner adjacent to it is also enclosed and paved with a slate slab raised some six feet above the chamber floor. In the case of hut 7 a stone mortar, a basin of whale-bone, and cooking pots that had contained animal bones stood upon the raised floor. This corner may therefore be regarded as the kitchen of the chief family. A mortar and pot were found in the opposite corner of the same hut, perhaps implying the conduct of culinary operations there too.

Built out from, or recessed into, the rear wall of every hut stands an odd structure resembling a dresser and consisting of two tiers of shelves. Each shelf is formed by one or two large flagstone slabs resting on three pillars. Finally, let into the hut-floor in one corner, are three or four rectangular cists, walled with four slate slabs the joins between which have been carefully luted with clay as if to make receptacles watertight. The cists rarely contain anything but sand, and it has been suggested that they served as tanks in which limpets were kept fresh. However, from the cists in hut 3 a carved stone ball, a stone cup and perforated oyster shells were collected as if the receptacles were really storage boxes.

A peculiar feature, observed so far only in hut 7, deserves a brief digression. Under the side wall of the hut in the right hand bed-enclosure a cist grave had been laid containing the skeletons of two aged women, buried in the contracted position. It looks as if the old dames had been laid to rest here, possibly even sacrificed for the occasion, in order that their ghosts might help to sustain the walls in accordance with a very wide-spread, very ancient and very persistent superstition. In any case the bones show that the villagers were suffering from rheumatic affections such as might be expected from their mode of life. Prof. T. H. Bryce has been able to calculate the stature of one old woman as just under 5 feet 5 inches, confirming the inference from modern Scandinavian comparisons that low doors and short beds do not imply a race of dwarfs.

That the huts were living rooms and not mere bed-chambers is clear from the condition of the floors. These were littered not only with toilet-articles—beads and paint-pots—but also with tools,

¹ *Proc. Soc. Ant. Scot.*, xxxviii, 175.

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broken pots and above all food-refuse. Indeed the villagers tolerated a nauseating amount of filth on the hut floors, but none the less they did not allow it to accumulate to a deep deposit. Periodical sweepings must have gone to swell the great midden heap that surrounded the huts. But that received contributions from other sources.

Naturally the villagers would not live continually in the dark dank huts, but on the rare fine days would go out and carry on their avocations in the fresh air. But the nearest open space was the surface of the midden heap which, as stated, covered the huts partially and the connecting passages completely. In its final shape the midden must have been an oval mound with its crest over passage A near huts 1 and 2, some 35 feet above O.D. From this region it sloped away to the south and east so that its surface lies about 30 feet O.D., south of hut 7, and only 28 feet O.D. east of 4. On the west the slope is interrupted by the wall flanking passage F, which here forms a sort of boundary to the residential complex. Storms have washed away too much of the seaward side of the mound for us to form an accurate picture of its appearance on the north. Over the whole area just defined, *save over the sites of huts*, we find on the top a stratum, 10 to 18 inches deep, rich in implements and potsherds as well as animal bones and shells. The implements are the same in character as those found on the hut floors, but generally less finely worked—the sort of things, in fact, which you might easily leave behind if interrupted in your work by a sudden storm. The pots are often accompanied by their slate lids as if they had been used on the spot, and patches of ash may often be observed near by. Altogether the relics prove that the villagers fleshed carcasses, prepared skins and cooked upon the midden surface between their huts and above the passages. In other words, part of the midden deposit was due to occupation while the huts it surrounds and the passages it covers were in use.

Thus the absence of this occupational deposit over the sites of huts assumes a new significance. It means that there was no space available for occupation, presumably because the hut walls then rose above the midden level at these spots. That this was in fact the case is quite clear from hut 7, whose casing wall even today rises more than three feet above the top of the midden banked against it on the south. We must then imagine the great rubbish heap as studded with domical or conical projections where the huts emerged from its surface, and its even contours as interrupted by domes or cones of stones or skins.

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Onto this midden surface the covered passages ultimately led. Passage A was very likely roofless east of the entrance to hut 5 and eventually came out onto an open paved area on the southeast at the foot of the retaining wall of hut 4. Passage C winds upward round the east side of 7 to an open gallery ending in a *cul-de-sac* on the south, but giving access by a gap in the east wall to a series of stepping-stones laid on the midden surface where trampling would be likely to produce slush. The west end of passage A is more interesting. It is barred by an elaborate gateway through which one passes, not onto an open midden surface but onto a paved area, conventionally termed the market-place, roofless but sheltered by walls on all sides.

North and west of the market-place rise the walls of hut 8 with its horseshoe porch. This hut differs even externally from the rest in that it stands from its foundations quite free of midden or other buildings. Its massive outer wall has at its base a course of great slabs on edge with the intervening angles cleverly packed with smaller stones. Inside, though it boasts keeping-places, a beehive cell and a square hearth, it lacks beds, limpet-boxes and dresser. The remains on the floor—hundreds of flint and chert chips and implements, blunted jawbones that might serve as fabricators (fig. 1, B3), piles of clay and stones cracked by heat—suggest the workshop of a flint-knapper and potter rather than a dwelling. The south side of the market-place is screened by a high wall, only one course thick, which runs westward for 26 feet and then stops abruptly without showing the least inclination to turn back upon itself. Behind this wall was nothing but sand. Yet it rested on a carefully laid bedding of blue clay which also underlies the market-place and extends a long way south and west thereof.

On the north of the market-place a pavement runs through the gap between the casing wall of hut 2 and hut 8 and seems to continue, unfenced, round the latter. Westward the market-place pavement is continued round the porch of hut 8 between the latter and the southern screen wall. But this pavement ceases with the wall though the blue clay bedding runs on westward down hill for an uncertain distance. Finally on the south a paved way F leads from the market-place to a cell F1, and thence on to the midden surface south of hut 7.

The area between passage F and the market-place is traversed by various walls, not all contemporary, but all only one course thick, all faced only on the side directed towards hut 7 and all radiating from the southeast corner of the market-place. The function of these divergent lines of wall is quite unknown. They can hardly have

SKARA BRAE

been defensive since they faced the settlement. Were they corrals? or screens to retain sand-dunes blowing up from the southwest? Only one thing is clear: the region outside the western gate in passage A was occupied by structures essentially different in character from the dwellings of the central complex.



FIG. 1. Heavy bone tools.

By permission of the Society of Antiquaries of Scotland

One interesting conclusion to be drawn from the foregoing study of Skara Brae may be called the 'antiquity of modernity'. As far as internal arrangements are concerned, many of the features of these Orkney huts must have been foreshadowed at least in the Bronze Age hut-circles of Mainland Britain, where conditions for their survival are missing. On the other hand they no less patently foreshadow

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architectural details which survived in northwestern Scotland and elsewhere till recent times. A Norwegian peasant hut from Saetesdal now in the Folk Museum near Oslo, though built of timber, is quite surprisingly like the typical dwelling at Skara Brae. Being of wood the Norwegian house is of course rectangular, but it has the low narrow door, the square central hearth, and the fixed beds, short and broad on either side, just as in Orkney.

But if Skara Brae thus enriches our knowledge of an ancient and general type of north European dwelling, it is in other respects, as already indicated, a highly specialized adaptation to peculiar local conditions, and so we might reasonably look on the spot for earlier phases in the process of specialization. The midden deposit at its highest point is 15 feet thick; six or seven feet of refuse or ruins of older walls can be found under the floors of the huts just described. In fact, as a result of the latest operations, it has been possible to distinguish three well marked structural periods anterior to the phase so far described. In their remains we might hope to discover more generalized forms and also hints of the factors determining the direction of subsequent modification. Let us accordingly review the history of the village.

The site was originally a comparatively level stretch of decomposed shale sloping up gently from 17.50 feet above O.D. along its northern edge to 22 feet behind hut 7, 70 feet to the south. Before man settled on the spot the clayey surface was partly covered with blown sand, 2 feet deep along the low northern edge of the area but gradually thinning out and eventually disappearing altogether southward. The sand accordingly tended to counterbalance the slope of the original land surface, leaving the original settlers a convenient level space on which to build their huts. Of these however little can be seen without disturbing the more precious later structures. A hearth of exactly the form already described was found on virgin clay in one test pit; other pits disclosed only layers of midden resting on sand or clay, but containing sherds and bone implements identical in type with those from the latest huts and the topmost stratum of occupational midden. After midden refuse had accumulated to a depth of from 2 to 3 feet, the village was remodelled. New huts were built upon the old midden, which was often covered with a bedding of blue clay to give security to the new foundations. The ruins of four huts belonging to this second village have been partly explored and left open to inspection. Nearly all the features of the later huts are already foreshadowed in

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period II. We see the same beehive cells, the same narrow doorways with channels for the bar, the same square fireplace in the hut's centre, the same sleeping places on either side, partitioned off by big slabs on edge and with keeping-places in the wall above them, and the same 'dressers' recessed into the rear wall. Only limpet-boxes are missing. Built sewers or conduits, roofed with heavy lintels and sloping seaward, are also attributed to period II. But it is still uncertain to what extent the huts were buried in refuse or connected by covered passages. Two hut walls at least were of the type, illustrated by hut 8, designed for exposure to the elements, and another abutted on a paved area that was almost certainly uncovered. On the other hand some of the midden accumulation between huts 9 and 6¹, must be assigned to period II.

In any case the huts of the second village were eventually dismantled, only a couple of feet of the walls being left standing unless they could be incorporated in a subsequent structure. Huts 4¹ and 6¹ were left deserted long enough to become silted up with drift sand to the level of the wall stumps. Hut 9 was filled with midden and stones while hut 10 became a cesspool. Then over the wall-tops, the sand between them and the midden layers around them, fresh layers of midden or blue clay might be laid down to afford foundations for new hut walls of period III. The cesspool in hut 10 was hidden by a paving for which the sewage formed a bedding. The huts of period III were thus erected on a thoroughly artificial foundation.

The third village was not erected in a day. Huts 2 and 3 are built up against the walls of hut 1, apparently after a couple of feet of midden had accumulated round their bases so that the floors of the new huts are at a higher level than that of 1. Hut 4 is similarly built on to hut 5. The latter had from the first been protected by a casing-wall exposed on the west and south so that layers of sand alternating with midden had accumulated against its exterior. Then a section of the casing wall had been pulled down to make room for a small hut (6) which was built up against the inner wall of 5 on the west. But hut 6 in its turn was pulled down; all that remained of it was the door, a section of the north wall, and one 'limpet-box'. Its place was taken by a small cell just inside the door, the rest of the hut's site being used as a rubbish tip. So too hut 4, when first erected, had been exposed on the southeast and east. Here the hut wall has a neatly built face like that of hut 8, and this face had been carefully luted with blue clay, evidently to protect it from the weather. The

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wall of its entrance passage, however, had, from an early date, if not from the start, been extended eastward and bent back to join the inner hut wall. The space thus enclosed was packed with midden, so forming a sort of buttress flanking the entry. Later this wall was extended to form a casing wall encircling the whole hut and joining up with the casing wall of 5 on the south. The space behind the casing wall was filled with midden till it became a sort of platform round the hut. This platform rose from a pavement laid at the base of the casing wall and continuing the line of passage A.

Viewing the history of the village in this light, one is tempted to ask how far the system of covered passages was original. When, for instance the area west of hut 5 was open ground, why should passage A have been roofed over or even walled on the south? The foundations for the south wall, however, go down 2 feet below the present level of the passage floor which coincides with the assumed floor level of hut 6; and the doorway of the latter marks a secondary breach in the passage wall. The south wall of A therefore goes back to a comparatively early period clearly anterior to the erection of hut 6. But there was no obvious point in roofing this passage till hut 6 was in position. Passage C clearly goes back to the beginning of period III if not before, since the walls of period II huts have been retained for incorporation in it. Hut 7 itself may have been founded in period II; for there are no remains beneath its floor, and the midden, assignable by the pottery to period II, is banked up against its southern wall. Passage C might therefore be regarded as originally leading onto the surface of the midden as it existed at the end of period II and with which the floor of the blind uncovered gallery is approximately level. There actually is a sort of gate between the wall of 9 and 7 in the passage. But again roofing would seem superfluous until the area between 5 and 7 had become filled with midden to the wall tops of 7, and here we have six layers of midden separated by interpolated streaks of sand, suggesting a gradual accumulation. It thus seems likely that the system of tunnels—that above all distinguishes Skara Brae—only came to maturity during period III.

The clearest indications of the reasons governing this development is given by the ultimate fate of the village. All the period III huts had been abandoned precipitately; the number and variety of valuable objects recovered from the hut floors testify to hasty desertion. But the most conclusive proof of haste was the discovery of hundreds of beads and fine amulets at the narrowest point in the door to hut 7 and

PLATE I



FIG. 1. SKARA BRAE.
Hut 7 showing hearth, lools, dresser and entrance to cell.
P.W. THOM. KENT

PLATE II



FIG. 2. SKARA BRAE.
Exterior wall of hut 8 and porch built on to south end



FIG. 3. Hut 1: entrance to cell and bed
P& V. G. Childs

PLATE III



FIG. 5. SKARA BRAE
Door of Hut
Pb. V, G. Childe



FIG. 4. SKARA BRAE
Sewer under stratified masonry
Pb. V, G. Childe

PLATE IV



FIG. 9. SKARA BRAE: POTTERY 1

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scattered along the immediately adjacent section of passage c. Their disposal proves that they had fallen from a necklace broken as its wearer was squeezing through the door in headlong flight. In all probability all six huts were abandoned simultaneously. But there are no suggestions of hostile violence. The huts had not been ransacked for booty till the modern excavator arrived; their furniture was undisturbed. But immediately upon their desertion sand began to accumulate on their floor.

This was not quite the end of the village. After 2 feet 6 inches of sand had accumulated in hut 7, effectively blocking up the door, some of the old folks returned to the ruins, built a hearth of the usual square form on the sand and ate venison and shell-fish beside it. Three other thin occupation deposits were found still higher up in the same hut, each layer of ash, shells and bones being separated from the one below by a foot or so of sand. These facts, to which early accounts of excavations in other huts suggest parallels, imply that after the great disaster remnants of the original villagers occasionally took shelter from the storms beneath the walls of ruined huts. They suggest further that the abandonment of the site itself was due simply to a storm of exceptional severity and to no attack by human foe. The enemy that eventually overthrew the village was then very likely that against which its original defences had been primarily directed. The tunnel-like passages, the low narrow doors, the western walls all facing the village, would make good defences against gales and moving sand-dunes; the little tricks so obviously designed to catch a human foe in an Irish *souterrain* are conspicuously absent. If the reader doubts the need for such elaborate precautions, he need only visit the site on a windy day when some sand dunes are deturfed, remembering that the villagers possessed only bone shovels. In a word the peculiarities of Skara Brae result from adaptation to a deteriorating climatic environment.

And now, how old is this curious village? Its high degree of specialization implies long development in comparative isolation, during a period partly represented by the immense accumulation of refuse. Architecturally Skara Brae is unique. We must rely upon the relics recovered from it to fix limits for its foundation and desertion. Unfortunately these relics are almost as peculiar as the village itself. One limiting factor may first be emphasized. Within a radius of two miles from our site are three typical brochs from which remains distinctive of the Scottish Iron Age may be collected. Now such

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remains are conspicuously absent from Skara Brae. Not only has the village yielded no iron, nor objects certainly fashioned with metal tools, but it lacks equally distinctive broch types such as weaving-combs, handled cups of stone, and pots with everted rims. On the other hand we have now over a dozen stone celts, mostly adzes, and numbers of small disk-shaped scrapers of flint or chert, often quite as well worked as Tardenoisian specimens. The stone celts were hafted in deer's horn sockets of the type formed by cutting off a section of antler at both ends, hollowing out one end to make a socket, and making a perforation near the other. This is a comparatively rare type of haft going back to the mesolithic Maglemose culture in Denmark¹ but surviving into neolithic times in north France and Belgium.² Incidentally a crescentic pendant made from a segment of boar's tusk finds analogues in the same cycle of neolithic cultures. To the adze-like tools made from the metapodials of oxen (fig. 1, C1) there are likewise mesolithic parallels from Denmark³ and, much more remote, from the alleged neolithic levels of the lake at West Furze in Holderness.⁴ A curious spiked implement of flagstone as well as the bone 'pins' with lateral bulbs can be paralleled from the chambered tomb of Quoyness in Sanday, Orkney; but while the tradition inspiring such burial places goes back to neolithic times in Britain, Quoyness represents a highly specialized, and therefore possibly late, local variant. Still to other odd shale implements very close counterparts can be found in the realm of the belated Arctic Stone Age of Finland. However much one may discount the relevancy of these parallels, it seems clear that a truly neolithic tradition persisted at Skara Brae.

The pottery on the contrary has far less ambiguous Bronze Age affinities. It is indeed so badly fired that no complete pot can be reconstituted. (The bad firing may be due to the enforced use of peat for fuel, but the exceptional size of the grits incorporated in the paste is harder to excuse). We know that the vessels were built up by successive rings and had flat bottoms, often spreading out a little beyond the line of the walls. The sides were comparatively straight without handles, necks or shoulders; the rims were never bent out, as in Iron Age pottery, nor squashed down as in 'neolithic' wares.

¹ *Mem. Soc. Ant. du Nord*, 1919, p. 290.

² de Baye, *L'Arch. préh.*, p. 37; Loë, *Belgique ancienne*, pp. 148, 212, 230.

³ *Mem. Soc. Ant. du Nord.*, 1926-7, p. 96.

⁴ *Archaeologia*, LXII, p. 599. Most of the tools seem to have been merely hafts.

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On the other hand they are often bevelled or stepped *on the inside* in precisely the same way as the rims of food-vessels and cinerary urns. Two methods of ornament—relief and incision—were current. In the first class, which is common to all three periods, the patterns are formed by strips or blobs of fine clay applied to the rougher surface of the vase and carefully smoothed on. This is precisely the technique employed on Abercromby's 'encrusted' group of cinerary urns. In the second class, confined to the first two periods, the patterns are incised with a blunt bone point in a finer clay, coating the coarse surface of the vessel. In either case the patterns can all be paralleled on cinerary urns of the British Bronze Age. There is one exception. The sherd of class II shown in fig. 6 is the only instance of a genuine spiral on pottery from prehistoric Britain. But the pattern was used by stone carvers of the Bronze Age, notably at New Grange and Lough Crew. Incidentally there are stones at Skara Brae carved with lozenges and other motives familiar to Bronze Age art. Hence, despite neolithic survivals, it is difficult to date Skara Brae earlier than the Bronze Age of Britain.

But there is at least one formidable argument for a much later date. The carved stone balls, of which Skara Brae has yielded four examples, recur on the Scottish mainland over a curiously restricted area coinciding to a surprising degree with that where 'Pictish symbols' are distributed.* Now the latter are regarded as post-Roman. If the concordant distribution denote contemporaneity, then the balls, and Skara Brae too, must be post-Roman. But in that case it is difficult to comprehend how such purely Bronze Age traditions could have lived on right through the best broch period (A.D. 0-300) without being contaminated seriously by the broch culture; for whatever its age in years, Skara Brae embodies at latest a Bronze Age tradition.

* *Proc. Royal Soc. Edin.*, 1, pp. 70 ff, where the contrasts between Skara Brae and the normal broch culture are also set forth in detail as well as certain agreements with the 'later broch' culture.

Hill-Forts

by CHRISTOPHER HAWKES

A RETROSPECT

THE British hill-fort in these days needs no introduction. Everybody, certainly every reader of *ANTIQUITY*, is familiar with the ancient earthworks that crown the blunt spurs and whale-backed ridges of the chalk downs, and the grimmer ramparts of stone that take their place as one penetrates the lands of sharper contours and more obstinate rock that lie to the west and north.

In fact, they have caught the imagination in every age. To the early medieval mind, their creator might as often as not have been the Devil himself—while by contrast, when Camden brought in the Renaissance of British archaeology and topography, the Elizabethan age saw in them the stark memorials of the Empire of Rome which so dominated the visions of its scholarship. Belief in such names as Caesar's, Vespasian's and even Chlorus' Camp is indeed still dying hard, though the time is long past when to ascribe 'Camps' to 'the Britons' was an eccentric flight of 18th-century conjecture, and pre-historic man, their genuine author, has since then been favoured with an almost distorting flood-light of publicity.

But the intelligent British public has loved to cradle romances in the labours of its scientists and historians, and it was actually the solid achievement of Victorian archaeology in establishing the normally prehistoric character of our hill-forts that next made them for so many the misty fastnesses of a remote Stone Age. Yet the popular enthusiasm so aroused brought in a great period of discovery and survey in the twenty years or so before the war, during which a mass of valuable material was collected and published to give a lead to the workers in the present-day field of scientific excavation.

In that field the labours of ten years and more have set the hill-forts of this country, broadly speaking, in their true historical perspective as the peculiar product of the latest of the prehistoric periods, the Early Iron Age, which began about the 6th century B.C. and was sealed at last by the Roman conquest.

PLATE I



MAIDEN CASTLE, DORSET
The joined line across the upper portion of the camp marks the junction of the two photos used.
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HILL-FORTS

In the following pages, only those forts will be noticed in which some form of excavation has taken place, and only those where the fortifications themselves have been examined and their period fixed will be treated as certain examples of their class. Where digging or significant finds have attested an occupation but have not dated the fortifications, the attribution will be qualified accordingly. But forts known by surface inspection only, however tempting their outward features, will here be ignored, and such generalizations as are made will be based on excavated examples only. These form, of course, an extremely small proportion of the whole number, but it seems desirable now, when co-ordination of field work is in the air, to attempt a review of what hill-fort excavation has so far accomplished, thereby indeed emphasizing the gaps in our knowledge.

THE HISTORICAL SETTING

Where populations are sparse, primitive peoples tend naturally to a nomadic life. Pastoral communities want fresh grazing-grounds, and agricultural folk whose crude tillage is soon exhausted will likewise shift their settlements. When men are few, and living free from threat of serious danger like regular invasion, this tendency will inevitably assert itself—it does so in the Congo today, and it did so over long periods of prehistoric time throughout most of Europe. Such men will not undertake the labour of erecting defences in earth or stone, either as a 'camp of refuge' for occasional use, or as a 'fort' for permanent habitation, unless something happens to upset their normal existence—that is, unless warfare or the threat of it becomes a constant factor in life, either because of invasion or of such a general growth of population as will provoke tribal hostilities.

Not until late in the Neolithic Age are fortifications known in Britain, and these 'Neolithic Camps', with ditches broken by causeways,¹ ceased to be occupied at the latest soon after the appearance of the Beaker-people, which marks, early in the second millennium B.C., the transition to the Bronze Age. Evidently they belong to an exceptional

¹ Fully described by Dr E. Cecil Curwen in *ANTIQUITY* 1930, IV, 22-54, and thus needing no further discussion here. All known neolithic earthworks in Britain are of this causewayed type. The 'Danes' Dyke', indeed, the great simple promontory-fortress of Flamborough Head, was excavated by Pitt-Rivers and found to be associated with a flint industry of neolithic character—but until the whole complex of dykes in the East Riding is systematically examined it would be premature to try to date it closely.

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period which then passed away. Britain was not disturbed by invasion, still less over-populated, for many centuries afterwards, and as far as we know hill-forts were no more.

But a change in conditions came at last. Central Europe early in the first millennium B.C. was reaching a stage of denser population and acuter tribal consciousness, and with the growth of commerce and craftsmanship the incitements and the means to wage war multiplied together. The introduction of iron, which marks the beginning of the so-called Hallstatt period, was nothing less than a revolution, which accentuated this whole tendency: warfare was the natural result, and with it fortifications became all the more inevitable owing to the increased contacts with those Mediterranean lands where their construction had long been an established art.

Among the groups soon to emerge into history as the Celts, bronze-users inevitably went down before iron-users, and refugees consequently appear in the west, notably in Britain and Ireland, where they were seemingly the first immigrant bearers of Celtic blood and speech. Whether or no they erected hill-forts, some of them certainly made small square 'pastoral enclosures' or kraals, not unlike the partly contemporary *Viereckschänze* of the Rhineland, to defend their stock. And before long there came dangers more formidable than cattle-raiding, for these Late Bronze Age movements were followed and even probably overlapped by new immigrations to further the Celticization of Britain, which introduced iron and a Late Hallstatt culture.

The great Celtic expansion over Europe of which these formed part had as its main immediate cause the growing pressure of the Germanic peoples, advancing southwards from the Baltic. It was the Celts of the Lower Rhine who first felt this pressure, in the 7th century B.C., and a mingling of Celtic and Germanic features soon begins to be perceptible in the archaeology of that region: the pressure increased, and while the mixed Celto-German culture was destined to persist there for many centuries, and to produce the Belgae of our Iron Age c, a great dispersal of Celts inevitably began. It reached its height in the 6th century, when those groups who crossed over to Britain became our principal Early Iron Age immigrants. Another wave reached the Pyrenees and northern Spain, while the main German advance up the Rhine forced the Celts there into lateral expansion. This was happening just at the time when they were founding the great tradition we call the La Tène culture, which superseded that of the Hallstatt period and was at last merged in the provincial civilization of the Roman Empire.



FIG. 1. DISTRIBUTION MAP OF IRON AGE HILL-FORTS, PERIOD A

A black circle indicates dating-evidence from the defences themselves, a white one from within only. The stippled area represents the maximum extension of the culture, as assumed from known material

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Westward expansion in these years brought it into France, whence other Celts, still of Late Hallstatt culture, were displaced; some of them also migrated to Britain, whither they were not pursued.

Thus was completed our widespread agglomeration of Late Hallstatt immigrant groups, predominantly Celtic in blood, but inevitably including other racial elements out of the melting-pot of contemporary Europe. Fusing here and there with the Late Bronze Age peoples, they established Iron Age civilization all over the south and southeast of Britain.

The advance which they brought in tribal economy, and the economic and military revolution implied by the new metal, made absolute the change, already begun, from the old roving life of the country to conditions resembling those of the Hallstatt period abroad. Those conditions involved the idea and practice of hill-fort building. The hill-forts were the citadels of tribal groups, and their numerical increase in Britain in the centuries following the immigration attests tribal consolidation and development. The limits of the penetration are shown on the map, fig. 1, along with the distribution of hill-forts; these form about a quarter of the total number of the people's known habitation-sites, which are thickest on the open uplands, especially the Wessex and Sussex chalk, that gave them the easiest tillage and pasture.

The main block of their area remained in their undisturbed tenure till the 1st century B.C., and their civilization, though essentially of Hallstatt character, soon began to absorb influence from the La Tène culture across the Channel. Thus it really requires a name of its own: here we shall be content to call it 'Iron Age A',² and the succeeding immigrant cultures 'Iron Age B' and 'C'. The former, in the southwest and northeast, merely bit into its fringes; it was only the latter, brought by the Belgae, that superseded it in its real home, and in some districts, notably east Sussex, it was never superseded at all till the Roman conquest.

We can now turn to examine the known hill-forts of Iron Age in something like detail.

IRON AGE A

(a) *The known forts*

Hill-forts have been classified according to type by the Earthworks

² The pottery exhibits some regional variation, but the village at All Cannings Cross is the most famous approach to a type-site.

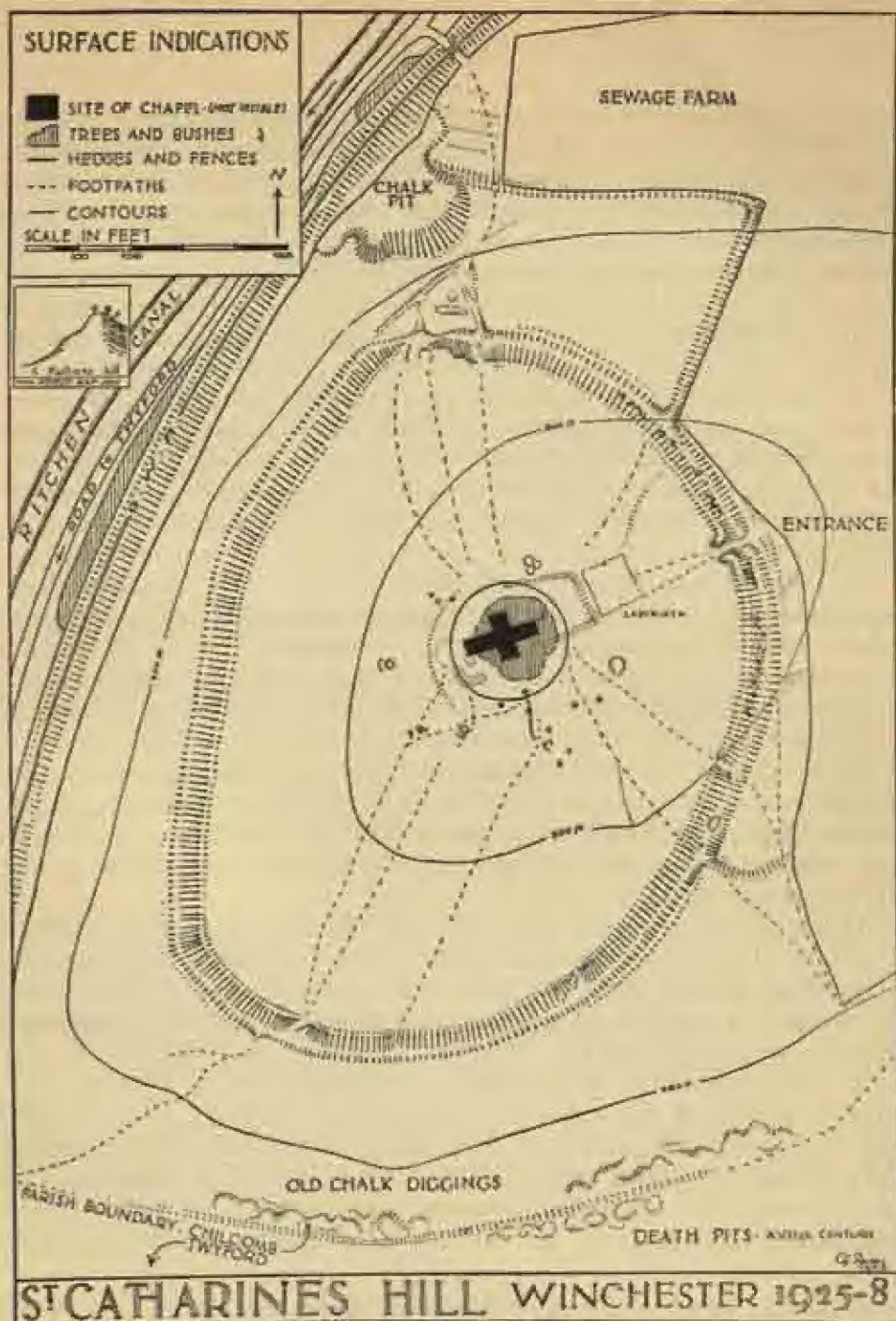


FIG. 2. ST. CATHARINE'S HILL.

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Committee²—their first class may be intelligibly described as promontory-forts; their second as comprising contour-forts, where the defences follow the natural line of the hill; and plateau-forts, where they are less dependent for protection on any natural slope. This classification is of course no more a criterion of date than one based on mere size—the forts of Iron Age A vary greatly in size and may belong to any one of the committee's classes. The only reservation as regards their type seems to be the absence of more than a single line of encircling rampart, and of *complex* outworks guarding an entrance.

In fact, most of the known works of this phase are contour-forts. But promontory-forts also exist: that of BUTSER HILL, formed apparently by re-fortifying a deserted neolithic work, is very possibly an example, and the double ramparts across HENGISTBURY HEAD defend a well-known site first regularly occupied early in Iron Age A, to which the main work is likely to belong.

The promontory-fort of LECKHAMPTON above Cheltenham is a clearer case: it underwent improvement in a late stage of Iron Age B (see below, figs. 10 and 13, pp. 82, 88), but the original wide shallow ditch is dated by pottery to the earlier phase, and must be correlated with the stone-cored earthy rampart behind the later rubble facing-wall.

The works of the other class consist as a rule of a single rampart and ditch, though the early stone-built fort of CHASTLETON on the Cotswolds recently examined by Mr E. T. Leeds is ditchless, and at FIGSBURY RINGS in Wiltshire the outer ditch is incomplete, a 'quarry ditch' inside the fort having apparently been used to get most of the material for the rampart.

The area of Figsbury is about 15 acres—a rather larger fort, that of ST. CATHARINE'S HILL, a bare half mile outside Winchester on the south, may be taken as more typical of the larger works of this period (fig. 2). It is roughly an oval of 23 acres, with one entrance on the northeast, to which we shall return; between this and the summit of the hill (afterwards the site of a chapel), the inhabitants had their main cluster of pit-dwellings. Rather stronger and smaller, but in many respects very like this is the fort called THE TRUNDLE, above Goodwood, which contained similar pit-dwellings, but has two entrances. It covers the site of a neolithic camp with causeways, and continued in occupation till a date in the 1st century B.C., or about a century longer

² *Scheme for recording Ancient Defensive Earthworks and Fortified Enclosures*: Congress of Archaeological Societies (revised 1910), classes A and B.



THE MOUNTAINS

750

THE MOUNTAINS

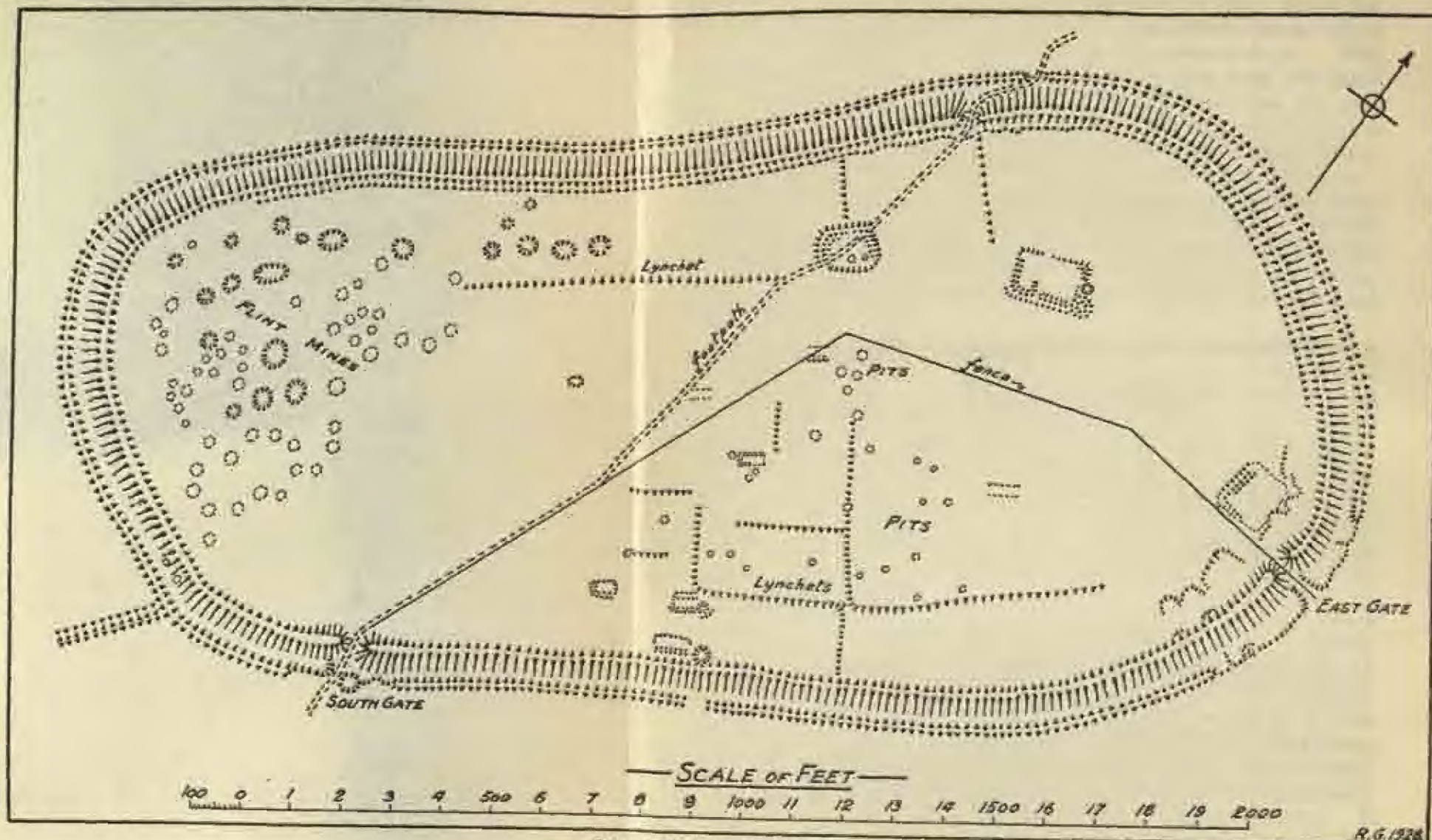
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THE MOUNTAINS

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Pl. 1. PLAN OF CISSBURY, DORSET
 From *Current's Prehistoric Sites* by courtesy of the Hants. Association

R.G. 1928

HILL-FORTS

than St. Catharine's Hill. THE CABURN, above Lewes, had a still longer life; the single earthwork was supplemented later on (1st century B.C. or A.D.) by a stronger rampart outside it, with complicated entrance-defences in the later Iron Age style. The pit-dwellings within were very numerous; in fact, the Caburn was a populous fortified town, as indeed most excavated hill-forts have proved to be, though there are exceptions, of which in this period Figsbury Rings is the chief, where the traces of occupation are scanty enough to suggest intermittent use only as a 'camp of refuge'. This is a point on which there will be more to say presently.

But the best known and most imposing hill-fort on all the Sussex Downs is CISSBURY (fig. 3), and the Worthing Field Club's recent excavations have established that it too belongs to Iron Age A and was probably erected about the turn of the 4th and 3rd centuries B.C. The great rampart, which includes most of the area of the famous neolithic flint-mines, encloses a full 60 acres, and must have been intended in times of danger to hold, in addition to the permanent population whose pits are shown on the plan, the people and stock of many unfortified villages in the country round, like the well-known ones at Park Brow and Findon Park not far away. Cissbury may thus be said to combine the characters of a permanently settled hill-fort and a 'camp of refuge'.

At LIDBURY CAMP, Wilts, there has been alteration, but both the original and the amended plan belong to Iron Age A and illustrate an important tendency in the art of fortifying entrances, as will shortly be explained. SOLSBURY HILL above Bath, is also of this period, but quarrying has left too little of the rampart for a full appreciation: it was clearly a fairly normal contour-fort.

Lidbury has a rather angular outline, and this is still more noticeably true of LIDDINGTON CASTLE, Wilts, which occupies a promontory-site and approaches quadrilateral form; of HOLLINGBURY, a squarish work above Brighton; and of BEACON HILL camp, Harting. These are not of great size (8-9 acres), and all have yielded Iron Age A pottery, though in the latter two cases the association with the earthwork has not been proved.

This form suggests an enlargement of the Late Bronze Age square kraal, which was itself certainly still in use in our period. At THUNDERS-BARROW HILL above Portslade such a square kraal, certainly of Iron Age A, was apparently superseded by a smallish circular hill-fort: the latter has not been dated, but at SAXONBURY in Ashdown Forest an oval stone enclosure, apparently a variant of the square kraal, was similarly

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superseded by a small hill-fort belonging to the century or so before the Roman conquest, that is, contemporary with the outer rampart at the Caburn. A similar sequence earlier is found at WOLSTONBURY near Brighton, where both the inner oval enclosure and the wider outer one have been proved to belong to the first half of Iron Age A, though the latter definitely supersedes the former.

A peculiarity of Wolstonbury is that the ditch of the outer ring is inside the rampart.⁴ It is of course easier to throw up a rampart below than above the ditch which supplies its material, but perhaps there is a fuller explanation yet unrevealed. The sequence of smaller and larger enclosures is anyhow an interesting point. In east Sussex, where Iron Age A lasts until Roman times, there is not such difficulty concerning successive occupations as demands caution in Dorset.

At HAMBLETON HILL the first fort on the northern spur, itself certainly of Iron Age A, was subsequently enlarged and altered to a degree that makes precision difficult about its original defences, which may possibly upset the generalization put forward above by proving to have been double from the first. Their later phases may be due to Iron Age B as well as C people; but uncertainty surrounds the former's penetration here from the west, and the full history of forts like this and SPETTISBURY, where excavation has not been scientific, is still obscure.⁵

EGGARDUN has at least yielded apparent Iron Age A material mainly, and the inner ditch bottom at DUDSBURY has produced Iron Age A pottery,⁶ though in both complex defences suggest a sequence of occupations and plans. Its excavators indeed considered Eggardun neolithic, but this was before the recognition of true neolithic features in either earthwork or pottery; its many pit-dwellings are of regular Iron Age type, and the associated flint industry occurs elsewhere in Iron Age settlements, though the variations of its prevalence have yet to be explained. It certainly occurs north of the Thames also, notably at the two excavated forts of Epping Forest, LOUGHTON CAMP and AMBRESBURY BANKS. Both were dug by Pitt-Rivers, and Mr Hazzledine Warren's recent renewal of work at Loughton has made it clear that the earthwork and the flint industry both belong to Iron Age A, as

⁴ This also occurs at Rybury in Wiltshire, overlying what seem to be neolithic works.

⁵ See p. 81.

⁶ Information kindly supplied by Mr Heywood Sumner, F.S.A., who has allowed me to examine the pottery from his trial excavations; the responsibility for this dating of it is, of course, my own only.

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attested by pottery, a conclusion which plainly holds good also for Ambresbury. In both the flint industry is of neolithic character and must be a direct survival of that primitive tradition.

■ To the north, along the belt of open chalk followed by the Icknield Way, the WAR DITCHES, Cherry Hinton, also dates originally from Iron Age A, and produced flints along with native and a piece of Gaulish pottery. Near it on the Gog Magogs, WANDLEBURY is probably coeval, but its defences may not have been tripled till Iron Age C, when coins show it was still occupied. ARBURY BANKS near Ashwell, where the defences are partly double, had probably an analogous history: it covers some 12 acres and contained pit-dwellings. The scanty known pottery is Iron Age C, but earlier occupation is not excluded.

The neighbouring fort, now almost ploughed out, of WILLBURY, on the Icknield Way and commanding the Hitchin gap, must have been fairly similar. The excavated pottery shows a clear sequence through Iron Age A to the Belgic forms of C. Pottery of both these phases has also been found at the ploughed-out fort at WALLINGTON, Surrey, but it was A pottery that characterized the yield of the ditch. It had apparently been used for cooking as well as defence, and there were further suggestions of an Iron Age C occupation in which the defences were no longer used as such. In Berkshire, pottery seemingly of Iron Age A has been found at the marsh-island fort of CHERBURY, and its ring of earthwork is likely, though not certain, to belong to this phase. On the downs to the south the defences of UFFINGTON CASTLE are definitely dated by pottery, and ALFRED'S CASTLE near by may be contemporary. Surface sherds with the same implication are plentiful at WITTENHAM CLUMPS, as also in Hampshire at OLIVER'S BATTERY near Alresford. In fact, a large proportion of the hill-forts of southern England will probably turn out to belong to, or at least to have originated in, Iron Age A.

However, we shall find instances of later Iron Age fortifications appearing on the sites of settlements of the earlier phase which were themselves undefended, and it must not hastily be assumed, with a view to augmenting this list, that pottery or other material discovered inside the enclosure of a hill-fort must inevitably date its defences. Careful digging in the defences themselves is of course required, and this suggests the devoting of a few paragraphs to the constructional features that such excavation has revealed.

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(b) *Stonework and Earthwork*

If a rampart built wholly of dry stone is to have the vertical faces required to make it a sufficient obstacle to an enemy, the facing at least must be carefully coursed,⁷ and where stone of the right shape is naturally present, such as the oolite 'slate' of the Cotswolds, this was done in our period, as for instance at Chastleton. But over much of the south of England such stone is absent, and in the chalk country the nearest observed approach to such a method is the facing of a chalk rampart with blocks of sarsen; this was certainly done at Alfred's Castle and Uffington Castle. In the absence of such stone all that can be done with an earth rampart without timbering, which will be considered below, is to pile the material dug from the ditch solidly enough to form a defensible slope. To this end material weak in itself is better consigned to the bottom of the inner core, and this is the natural place for heaping of surface soil, scraped very often not only from the line of the ditch but also from inside that of the earthwork. Over this comes the more solid stuff reached by digging the ditch deeper, carried up presumably in skin bags or baskets and laid in regular and compact tips. On these as a base the top of the rampart will be made up with the big lumps from the bottom of the ditch. Frost and rain will in a single winter coagulate the surface of a bank so built into a hard crust, which soon bears turf, and this binding is normally indestructible. Fig. 4 gives a cross-section of the St. Catharine's Hill rampart, showing seven successive tips piled as here explained.⁸ In this case they were easily distinguishable by the quality of their material and by the sharpness of their surface-lines; however, in some cases they were covered with layers of turf binding to give stability, and these show up as seams of dark mould in a cross-section. Care is required in distinguishing such seams from occupied surface strata which would indicate successive enlargements of a rampart at different dates: at Figsbury Rings, for instance, the excavators suggested the presence of both types of seam in the same rampart,

⁷ The special case of so-called 'vitrified forts', where a stone rampart is supposed to have been vitrified or calcined into a solid mass by subjecting it to intense heat, cannot be considered here: it deserves a paper to itself. Such forts are well known on the Continent and exist in Scotland and Ireland, but are unrecorded in England and Wales.

⁸ The seventh is a patching of earth to complete the contour of the sixth.

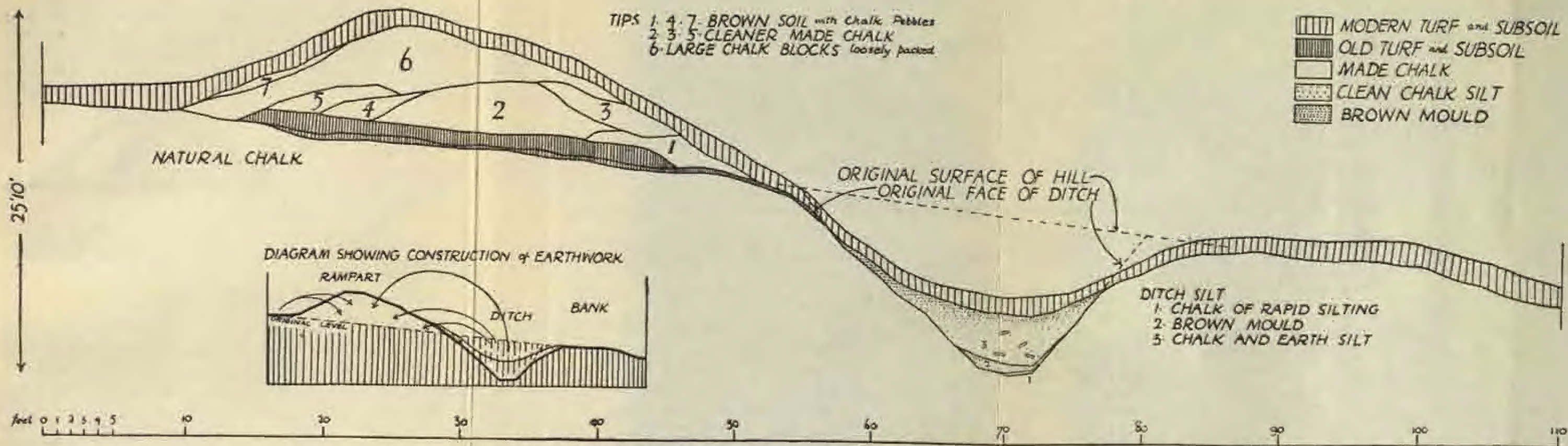


FIG. 4. ST. CATHERINE'S HILL, WINCHESTER: CROSS-SECTION OF RAMPART AND DITCH, SHOWING CONSTRUCTION IN TIPS

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as sketched in fig. 5. At Leckhampton, on the other hand (see below, fig. 10, p. 82), the rampart was deliberately built with a stone core surmounted with earthy make-up.

(c) *Timberwork*

The rarity of recorded timberwork in British hill-fortifications is at first sight surprising. Timber revetments were certainly used in Iron Age A for entrance defences, as will shortly be seen, and one would expect them along the lines of ramparts also, but in fact the recent excavations at Cissbury are the first in which the bedding-trench for one has been found, running along the foot of the rampart above the

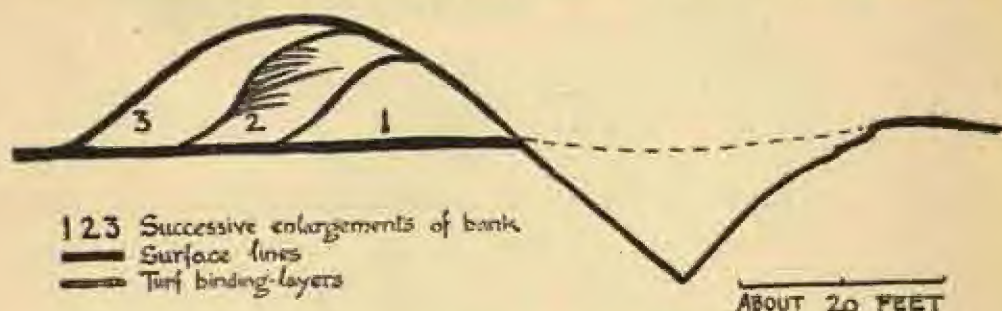


FIG. 5. FIGSBURY, CROSS-SECTION OF RAMPART AND DITCH showing successive enlargements and turf binding

ditch (as A, fig. 6). It is more than likely that erosion has destroyed this indication in other excavated cases.

Such a revetment may have been carried up to form a palisade above, but there is also a different case to be noticed. In the inner rampart of the Caburn, Pitt-Rivers discovered stake-holes aligned at irregular intervals near but well within its outer edge: the timbers in these must have been carried up through it to support a breastwork above the face of the slope (B in fig. 6).

Lastly, a little-known discovery made in the 1850's by Edward Martin-Atkins at Uffington Castle seems to combine these two devices. Along the outer foot of the rampart, he found one row of post-holes (some containing clearly Iron Age A pottery), and 5-6 ft. inwards from this another, parallel to it, and dug down likewise in the natural ground. One of the inner row of holes was still open right up through the rampart to within a foot of its surface, with the chalk around it 'in a

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hardened mass, as if from being rammed when wet'. He concluded that a double revetment of posts and wattling, with rammed chalk rubble between, formed the main line of defence (10ft. or so high),⁹ backed by a sloping embankment a few feet lower, so that the upper part of the timbers also served as a breastwork (c, fig. 6). This is the nearest approach to timber construction abroad yet found in Britain in Iron Age A.

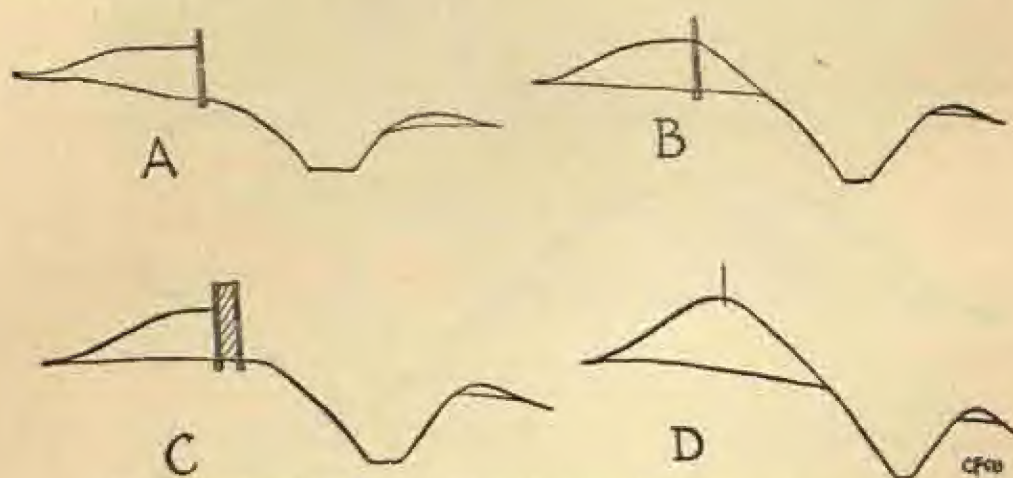


FIG. 6. Diagram showing recorded (A-C) and possible (D) types of timberwork in hill-fort defences

For the popular idea that the crest of a hill-fort rampart was normally crowned by an ordinary palisade (D in fig. 6) excavation has so far produced no evidence. One can only conclude that such a palisade, if it existed anywhere, was a light and perhaps temporary fence only which will almost inevitably have vanished without a trace, as it would not require a bedding-trench or post-holes deep enough to escape natural surface disintegration.

(d) Entrances

Entrances are naturally the weakest points in any defensive lines, and as early as the Hallstatt period special devices for their protection are found in Central European forts. Chief among these are the inturning of the rampart-ends on either side of the approach, and the

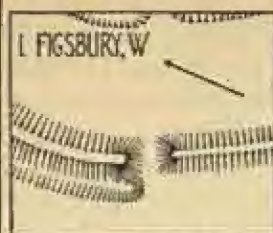
⁹ He says nothing of the sarsen facing more recently noticed (p. 70).

BRITISH HILL FORTS: TYPES OF ENTRANCE

EARLIER: A

B

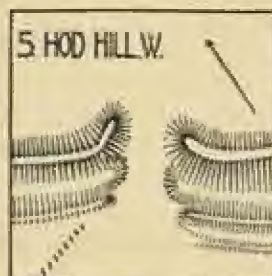
C



LATER: A

B

C



SCALE 0 50 100 200 300 400 500 FEET

FIG. 7. COMPARATIVE CHART ILLUSTRATING THE TYPOLOGY OF ENTRANCES
The arrow marking true north is in every case inside the fortified area

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setting of the whole entrance askew, so as to expose the flank of a storming-party: simple outworks may also be found to mask the causeway piercing the ditch. As we should expect, these devices were brought to Britain by the people of Iron Age A. Simple entrances (A in fig. 7) of course occur, as at Figsbury (no. 1) and also at first at Lidbury (no. 2). Here the original line of the ditch is marked by broken lines on the plan, but later in the same period the rampart-ends were thrown forward over the old ditch with a slight inward curve, the better to command the approach.

As well as this gentle incurving (B) there is also the sharply inturned type (C), exemplified by St. Catharine's Hill (fig. 7, no. 3). The low bank outside the ditch (also present at Lidbury and elsewhere) was here doubled as a simple outwork and the whole entrance set slightly askew. But the most important feature of the works is the revetting of the whole entrance with timber, backed with clay. The history of this entrance falls into four periods, all included in Iron Age A, and reconstructed in fig. 8. At first it had, behind a double gate, a quadrangular guard-house on either side of the passage-way, cut back into the ramparts and timber-built continuously with the revetment. These were subsequently dismantled, and for a long time the bays so formed were left to silt up, and the whole defensive scheme was neglected. After this peaceful period the works were suddenly reconditioned: the ditch was recut, the ramparts enlarged, and the passage-way half blocked with a deeply-bedded stockade, which was buttressed, along with much of the revetment, with walls of chalk blocks. Lastly, all this in turn was dismantled and the entrance was left once more unprotected, without even a gate.

At the Trundle, the east gate has yielded a sequence of plans most interesting to compare with this.¹⁰ The original double gateway was rather like that of St. Catharine's Hill period A without revetments or guardhouses. Next, the defences were completely re-arranged, with two single gates placed one behind the other so as to form a barbican, complete with flanking revetments. This scheme answers to period C at St. Catharine's Hill; but the series closes, perhaps as late as the 1st century B.C. when St. Catharine's Hill had been destroyed, with the innovation, without parallel elsewhere, of three large pits across the inner end of the approach to hold three immense gateposts, each one

¹⁰ The excavator, Dr E. Cecil Curwen, has most courteously enabled the writer to anticipate here the forthcoming report in *Sussex Arch. Colls.*

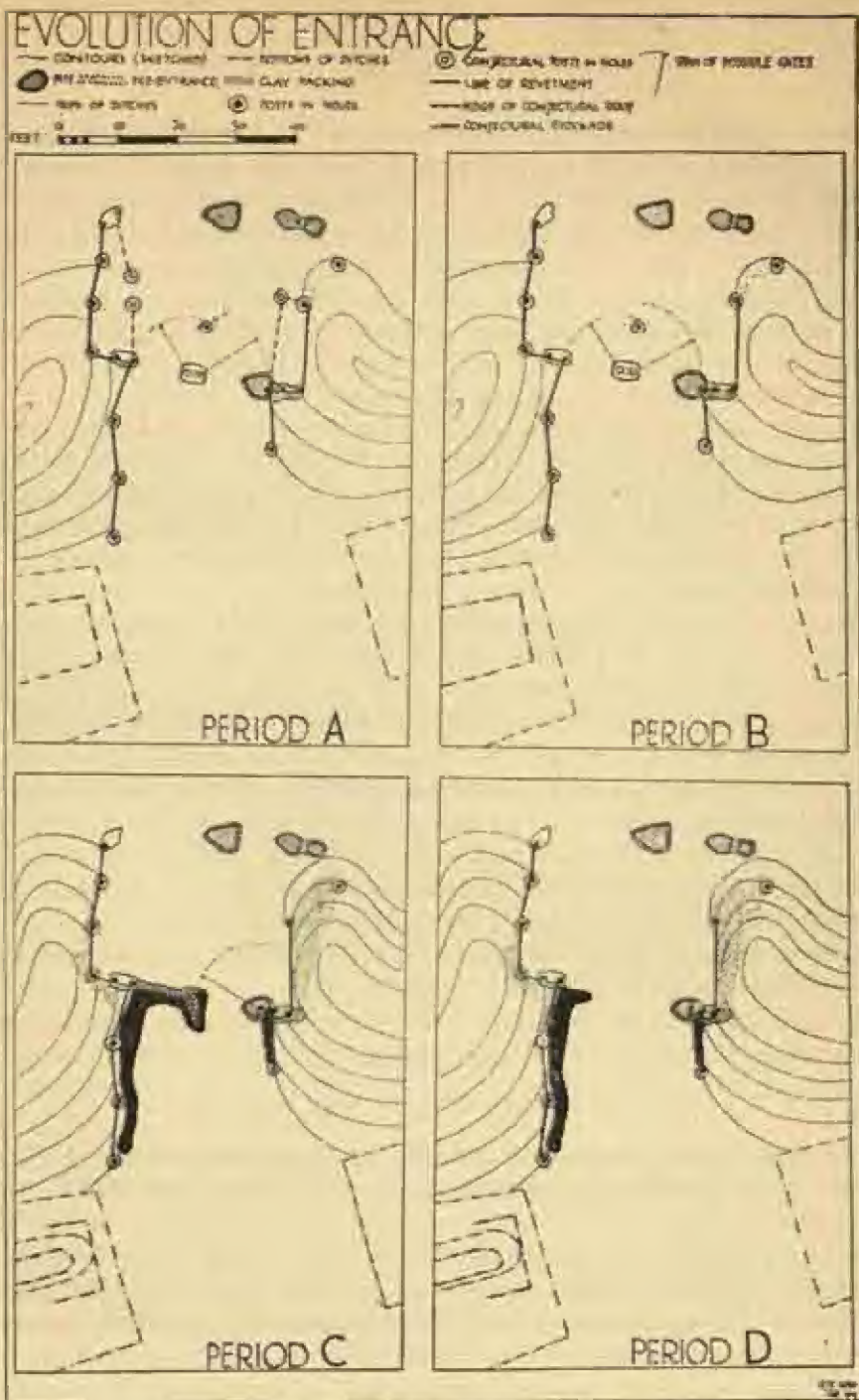


FIG. 4. EVOLUTION OF THE ENTRANCE AT ST. CATHARINE'S HILL

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evidently a whole tree-trunk. It appears that these represent a grandiose scheme of fortification, begun shortly before the final evacuation and never finished: the same thing was apparently done at the west gate.

These two sequences, indicating, like the successive enlargements of the Figsbury rampart, the recurrence at varying intervals of emergencies requiring new defensive works, may lead us to a summary review of Iron Age A and its forts.

(e) *Conclusions*

It seems that while war was a danger which had to be reckoned with and demanded fortifications, its outbreak was in fact exceptional. In the more normal times of peace, permanently inhabited forts could be allowed to fall out of repair, and some 'camps of refuge' were altogether deserted.

But from time to time hostilities broke out, the country folk with their stock crowded into their tribal stronghold, and its defences, often perhaps hurriedly, were reconditioned to withstand assault. This incidentally helps to explain what has puzzled so many people, the absence of a water-supply inside most hill-forts. Regular sieges were plainly undreamed of, and there would normally be nothing to interfere with the fetching of water from a source outside the defences, and often indeed far below them, as it is fetched by the dwellers in the modern hill-forts of Algeria.¹¹ But the permanent presence of so many great ramparts was justified, for as there were no doubt constant tribal bickerings, warfare must always have been liable to spring from the background into the foreground of existence.

IRON AGE B

(a) *The Southwestern Immigration*

We have already noticed that before the end of the 6th century B.C. Celtic emigrants from the Lower Rhine found their way to the Pyrenees and northern Spain. The latter region was intimately linked with southwestern Britain by the Atlantic tin trade, which the Celts were soon dominating. It was, moreover, they who built the characteristic hill-forts in the northwest of the Peninsula, massive stone ring-works, often of polygonal masonry, containing circular stone dwellings.

¹¹ ANTIQUITY, Dec. 1927, 1, 397.

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Mr Leeds has contended that the stone hill-forts of the tin district of Cornwall are the work of Celtic immigrants hither from north Spain ; the argument is mainly based on the tin trade, certain significant brooches, decorated pottery, and the similarity of the forts, which is certainly close enough to attract attention.

Still, Spain need not be the only source of immigration : the whole Atlantic seaboard was always strongly interconnected, and origins must also be sought in Brittany, where Celts from further east were before long also established. Material which Mr Leeds finds significant is present there too, and the cross-channel connexion already attested by archaeology and later emphasized by Caesar's account of the Veneti is clearly an important factor in directing Celtic movement into Britain from this quarter.

Beginning in the 4th century B.C. the immigration was soon spreading all over the southwestern counties, where the Celts evidently dominated while mixing with the native population. The discernible Spanish influence in their culture was anyhow before long surpassed by that of Brittany ; the La Tène art and craftsmanship they thus developed is distinctive, and at its best well in advance of Iron Age A. The latter continued to exist largely undisturbed in the southeast, and its backward character implies little active continental connexion. The Iron Age B people, on the other hand, retained close trading and cultural links with Brittany and the lands beyond. From Cornwall and Devon they spread over Somerset and on to the Cotswold, absorbing or driving out such Iron Age A people as they found, and superseding their settlements. The degree of their penetration into Dorset is as yet uncertain, but their typical pottery certainly reached Hengistbury Head. They crossed the Severn Sea, and though they perhaps hardly penetrated inland beyond it, they seem to have pushed past the upper Thames basin northeast into the Midlands along the edge of the Iron Age A area.

Their culture, first appearing well back in the continental La Tène I, lasted till its subjection to Rome at the end of La Tène III in the 1st century A.D. In the latter phase their hill-forts had attained to a size and complexity never found in Iron Age A. Multiple lines of earthwork, complicated entrance defences, and great size and strength become characteristic of their work. Unhappily, the multitude of forts waiting for excavation to be definitely credited to their hand is out of all proportion to the known examples. It is from their famous lake-villages, inevitably exceptional forms of settlement, that we know their



FIG. 9. DISTRIBUTION MAP OF IRON AGE HILL-FORTS, PERIOD B

A black circle indicates dating-evidence from the defences themselves, a white one from within only. The stippled area represents the maximum extension of the culture, as ascertained from known material

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culture best.¹² Of the development of their art of fortification and the distribution of its products as shown on the map, fig. 9, our knowledge is at present fractional. Such as it is, it now requires to be reviewed.

(b) *The known forts*

CHUN CASTLE in Cornwall is the site which has furnished Mr Leeds with the text for his theory of the Iron Age B invasion ; it is roughly circular, with outer and inner ditches and walls faced with polygonal blocks of granite. Within, the area was divided up into a ring of dry stone buildings round an open space. Though of great strength the fort is much smaller than its Spanish analogues, its diameter being about 280 ft. externally and 160 ft. internally. This fact, the peculiar wall-construction, and the plan of the defences and of the intricate entrance make it a distinctly individual type among the known works of its period, which include a large variety of types. The excavated examples do not in the least fully represent this variety, but they enable us at least to make a start.

Digging was done in 1902 at TREGEAR ROUNDS, St. Kew, which consists of two concentric ramparts of earthy rubble without retaining masonry, fronted by ditches : the outer encloses $7\frac{1}{2}$, the inner $1\frac{3}{4}$ acres. An outwork guards the original entrance on the southeast through the outer rampart, which was proved by the association of pottery, etc., to belong to Iron Age B. The inner ring could not be exactly dated. Similar pottery was also found at CARN BREA in the excavations of 1895 ; however, these were mainly in the hut circles within the enclosure, which are apparently of more than one date, but the dry stone fortifications were probably added when the invaders of Iron Age B took over what may be supposed a previously occupied site. Partly double, they enclose some 10 acres, being rougher than but as massive as Chun, and formed at least in some places of big earth-fast upright blocks with smaller stones filling up the gaps between them. The megalithic tradition of the pre-Celtic inhabitants would seem to have been still exerting an influence in the Early Iron Age.

Equally typical sherds are known from the not dissimilar fort of TRENCROM.

In Devonshire, CRANBROOK CASTLE, on the eastern borders of Dartmoor, was explored in 1900, and hollows behind the main rampart

¹² The Glastonbury lake-village is of course the type-site for the pottery by which this culture can so well be recognized.

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produced Iron Age B pottery and nothing earlier. Similar pottery was found two years ago at HIGH PEAK HILL, Sidmouth, where the fortifications may be coeval but have now mostly fallen into the sea. But the finest explored site in the county is HEMBURY FORT, near Honiton, now in course of excavation.¹³

The fort, which crowns a steep narrow spur 8 acres in extent, has a double and on three sides a triple line of rampart and ditch, and the internal area is divided by two transverse banks and ditches, of later construction than the main works. Both are attributable to Iron Age B, but beneath lie the traces of an earlier system of defence altogether. The bedding-trench and remains of a palisade have been found beneath each of the main ramparts, and there was previous timberwork on the site of the transverse banks also. It is clear that Hembury is revealing a sequence of plans and occupations of the greatest interest, especially in this little-known part of the country.

When we come to Somerset, there is rather more material to hand. The great stone ramparts of WORLEBURY above Weston-super-Mare long ago attracted attention—too long ago, indeed, for the excavations that followed to have come very near to modern standards. The main stone rampart and the sheer limestone cliff which does duty for it on the north enclose 10½ acres studded with pit-dwellings, in over 100 of which Early Iron Age remains have been found, and the fortress may be safely assigned to our Iron Age B. The main entrance is on the south, and outer lines of stone and earthwork, with ditches, cover the most assailable slope on the east.

More than twice the size of Worlebury is DOLEBURY on the Mendips (22½ acres): here too the great main rampart is of stone, guarded by a ditch and a smaller outer rampart. No extensive digging has here been done, but enough has been found to enable Mr St. George Gray to ascribe it confidently to what we are calling Iron Age B.

The same explorer has established this result more definitely at CADBURY near Tickenham, an oval (6½ acres) enclosed by two stone ramparts and ditches, and at CADBURY CASTLE in south Somerset, a much greater work (18 acres) with quadruple ramparts and ditches, penetrated by two strongly guarded entrances. At HAM HILL, some 10 miles further west, work is still in progress. Its defences, of irregular

¹³ I am greatly indebted to the excavator, Miss Dorothy M. Liddell, for permission to include this notice of her work, and for much information concerning it, as well as the opportunity of examining pottery and objects found.

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plan enclosing a huge maximum area of some 210 acres, are multiple, consisting principally of two big ramparts and a ditch between, with an extra rampart and ditch on the northeast and southwest. Despite the discovery of some little Iron Age A pottery, it is reasonably safe to ascribe the main works in their present form to the Iron Age B people, who are attested by satisfactory finds. Their pottery has also been found at CANNINGTON PARK CAMP, a small simple work near Bridgwater overlooking the Parrett. Lastly, KINGSDOWN CAMP, Mells, has been excavated and is being published this spring by Mr Gray :¹⁴ its oldest structural feature is an irregularly cut inner ditch, dug apparently fairly late in Iron Age B to enclose about $\frac{1}{2}$ acre, with an entrance on the south-southeast. A Roman occupation then ensued which produced a regular outer ditch, and a dry stone wall partly built over the silt of the old inner ditch. The exact purpose of this small enclosure is difficult to ascertain, but it may be provisionally classed here as being defensive.

The question of Iron Age B in Dorset is still doubtful. Our invaders from the west may have taken and remodelled Iron Age A works like Hambledon and perhaps Eggardon and Dudsbury. Possibly they were the original builders of Spettisbury and of BELBURY above Poole Harbour, but the supervening Belgic people of Iron Age C may also have had a hand, and definite evidence from excavation is so far sadly to seek. HOD HILL indeed was certainly an Iron Age C stronghold when taken by the Romans, but the pit-dwellings excavated by Boyd Dawkins yielded evidence of an immediately previous occupation characterized by contracted burials. These are usually taken to indicate Iron Age B, though at Solsbury Hill and Wallington, above mentioned, some have been found in a definitely Iron Age A context, and certainty is not yet fully established. Anyhow Dorset, where all three Iron Age phases would seem to be present and where hill-forts are extremely plentiful, offers a promising field for the present-day excavator. The most famous fortress in the county, Maiden Castle (plate 1), certainly displays a sequence of plans, and some of the few known scraps of surface pottery suggest Iron Age B, but no more than this can yet be affirmed.

Another promising field is the Cotswolds, which abound in unexcavated forts. The hoards of iron currency-bars, which are typical

¹⁴ *Archaeologia*, LXXX. I am much indebted for Mr Gray's loan of the typescript of his paper prior to publication.

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of Iron Age B culture, found in MEON HILL and SALMONSBURY camps point to the southwestern invaders, but their work has so far here only been certified at Leckhampton, where they reformed the Iron Age A fort already described with a coursed rubble wall in front of the old rampart, and deepened nearly half the width of the old shallow ditch (P, fig. 10). There is no Iron Age C here, and their pottery is unmistakable; the entrance, which perhaps suggests a late date if not Roman influence, will be described below.

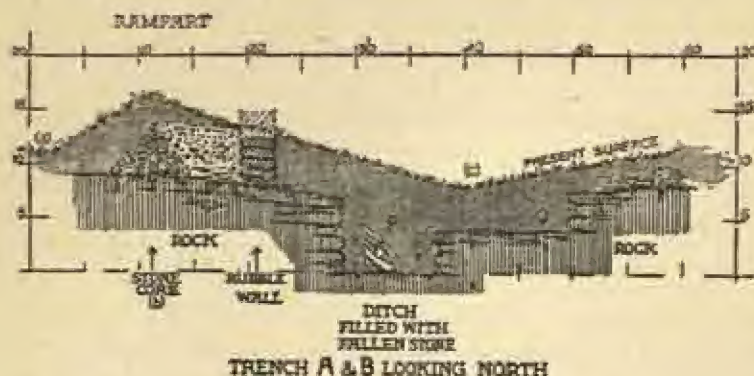


FIG. 10. LECKHAMPTON: CROSS-SECTION OF THE DEFENCES
showing succession of Iron Age A and B work

By courtesy of Mr E. J. Burrow

Following the obvious Jurassic zone northeast across the Midlands from the Cotswold country, the famous site of HUNSBURY near Northampton is reached; and here too the Iron Age B people supervened upon their Hallstatt predecessors. The excavation, in the 19th century, was commercial and not scientific, and the authorship of the single big ditch representing the defences was not absolutely decided; but the Iron Age B occupation, which was intensive, was certainly the main one, and made the place the most important centre of its culture in the Midlands.

A rather different case is that of CORLEY CAMP on the high ground near Coventry, a stone and earth fort some 200 yards square, explored in 1923 and 1926. Some worked flints were found and a little apparently pre-Roman pottery. The site must be Iron Age B, but occupation was

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apparently slight and a late (1st century A.D.) date seems indicated. The main interest of the work is structural, and calls for special notice below.

The only other excavated evidence for the northward spread of Iron Age B hill-forts across England comes from the Malverns. Digging in 1924¹⁵ at MIDSUMMER CAMP established here an Iron Age B date for the rubble-built main rampart, which encloses some 7 acres and has two entrances, and layers of paving were encountered in the ditch, apparently a unique feature, suggesting three successive occupations.

At the famous 'British Camp' on the HEREFORDSHIRE BEACON trial excavations in 1879 produced evidence that would seem to suggest occupation in Iron Age B as well as later, but a full exploration has yet to come.

There remain Wales and the Marches. In South Wales there is no satisfactory trace of true Iron Age culture before the Roman invasion except on the low hills and the coastal plain along the Severn Sea, which looks naturally towards Somerset. Here two definite Iron Age B forts have come to light: one is the original promontory-fort in LYDNEY Park more famous for its Roman temple, and the results of Dr R. E. M. Wheeler's recent work¹⁶ indicate a date in the 1st or 2nd century B.C. The other is at LLANMELIN on the low hill just north of Caerwent, where Mr V. E. Nash-Williams¹⁷ has begun excavation. It is a roughly elliptical enclosure of nearly 5½ acres defended by a multiple series of banks and ditches with a single narrow inturned entrance: abutting on it is a smaller oblong annexe, probably a secondary feature. Regular occupation is estimated to have lasted from c. 200 B.C. until the Roman conquest, when the new town of Venta Silurum at Caerwent probably superseded it.

If the southwestern culture did not penetrate far into South Wales, miscellaneous finds certainly attest its presence in North Wales, which it must have reached by way of the Severn basin. No really satisfactory evidence, however, of pre-Roman hill-fort building and occupation is here known, though it is a reasonable presumption that some of the

¹⁵ I am indebted to Mr J. W. Lucas, F.L.A., Librarian of the Malvern public library, for information and the loan of the typescript excavation-report by Mr I. T. Hughes preserved in his charge.

¹⁶ I am indebted to him for much information and material from his forthcoming report.

¹⁷ Who kindly provided me with a copy of his interim report in advance of its appearance in *Antiquaries Journ.*, XI, 70-71.

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forts, occupied later in the Roman period, for instance Dinorben and Caer Drewyn, originated before it.

An exception, however, must be made of MOEL HIRADDUG in Flintshire, where the remains of a fine La Tène shield of about the 2nd century B.C. occurred in a position apparently showing that the fort, an imposing structure with a series of dry stone ramparts and ditches and incurved entrances, was in existence when it was lost.

The distribution of these known forts of Iron Age B, few as they still are, covers the country containing most of the finest yet unexplored in England and Wales. Till excavation has made further progress, it must suffice to notice the outstanding structural features it has so far revealed.

(c) *Rampart and Entrance Construction*

Arriving as they did anything up to two centuries later than the Iron Age A people, the invaders of Iron Age B brought with them a more advanced technique of fortification, which they continued to elaborate right up to the Roman conquest, their intimate continental connexion no doubt keeping them in touch with the development of it which in Gaul followed the Cimbric-Teutonic invasion of just before 100 B.C. Multiple lines of defence with complicated outworks and entrance defences are frequent, and usually employed for contour-forts of varying form and often of large size and great strength. The geology of their territories usually demanded stone construction, though such ramparts are often now covered with turf. The polygonal masonry of Chun, which if connected with the forts in Spain may point to the Greek influence which there radiated from the colony of Emporiae, ranks higher than any of their other known work of the kind, but perhaps it, as well as such cruder building as at Carn Brea, points also to the influence of the immemorial native tradition of megalithic masonry. The average stone rampart, as at Cranbrook and Cadbury Castles and Leckhampton, consists of a rubble core faced with rough coursed masonry. Greater strength could be secured by multiplying this, and at Worlebury we have a splendid example of such multiple walling, as shown in fig. 11, with the additional advantage in the rearward member of a banquet or rampart-walk for the defenders. There is no evidence, as was once thought, that timber was also employed in these ramparts: since the Hembury palisades stand altogether apart, the only known case of this is at Corley, where the rampart was of earth faced with coursed masonry reinforced with lengthwise and crosswise timbering.

PLATE II



CORLEY CAMP: FOOT OF STONE RAMPART-FACING, WITH REMAINS OF TIMBERING BEHIND
J. A. PHILLIPS, CHARTER

HILL-FORTS

The remains of this construction, as will be seen from plate II, were found in a very ruined state, but they constitute the only approach yet recorded in England to the *murus Gallicus* of continental Celtic forts, where stout timber beams revet and interpenetrate a stone rampart.¹⁸

By contrast, the smaller Cadbury shows a piled stone rampart apparently sloped front and back without facing (see fig. 12), and un-strengthened earth and rubble work appears at Tregear Rounds and at Lydney, where successive tips could be detected in the make-up like those in the Iron Age A works of the Wessex chalk, showing the piled-up surface soil at the bottom and the stouter material dug from deeper in the ditch above.

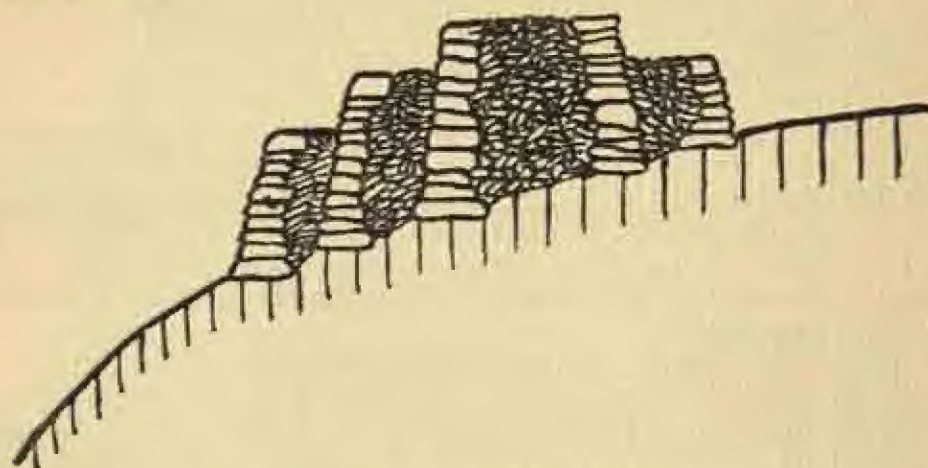


FIG. 11. WORLEBURY: sketch of the multiple stone rampart

The guarded entrance is liable to appear in quite an advanced form from the first. The gateways through the two ramparts at Chun are so placed as to necessitate a double turn between them, and the inner is flanked by inturned rampart-ends. Cranbrook Castle has two entrances of the gently incurved type, and the same plan on a more imposing scale appears at Worlebury. At Dolebury the actual entrance through the huge main works is of the simple type, and is accordingly illustrated under A in fig. 7, no. 10, but it is guarded by strong outworks enforcing an inclined approach up a natural gully, the full extent of which cannot be seen on this small plan. In fact, nearly every possible variety of

¹⁸ Described by Caesar at Avaricum, *B.G.* vii, 23; Déchelette, *Manuel*, iv, p. 491 ff.

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entrance must be exemplified by the Iron Age B forts; the more elaborate may be suspected to be of late date in the series, contemporary with Iron Age C in southeastern Britain and of the La Tène III period, to which at the earliest all the examples grouped as 'later' in fig. 7 belong, to whatever group any one may be assigned. The gently incurved (no. 5) and the sharply inturned (no. 6) entrances at Hod Hill and Hambledon (no. 9), with their protecting outworks, may possibly, as explained, be Iron Age B work.¹⁹ As well as the inturned type, also exemplified at Llanmelin, Ham Hill, and Hembury, both Hembury and Cadbury Castle have inclined approaches penetrating all the successive lines of rampart at a slant, and the two ends of the southern transverse bank of Hembury which flank the passage through it overlap to form an s-shaped entrance into the southern half of the fortress. Traces of post-holes belonging to a gate or barrier were here found.

A curved approach through multiple defensive lines is well exemplified at the smaller Cadbury (fig. 12), where the two ramparts diverge on the east of the northern entrance to enclose between their ends the passage way as it curves round those opposite, forming a double bottle-neck open to enfilade all round. The plan shows the position of the excavator's cuttings; no post-holes were found, but timber defences may still remain to be explored here as in similar entrances elsewhere.

Lastly, the special case of Leckhampton must be noticed. As seen in fig. 13 the passage (10-12 ft. wide) was flanked by semicircular projecting bastions, consisting apparently of great mounds enclosed by the rubble facing-wall described above as Iron Age B work (p. 82). At H and J were two guardrooms flanking the passage, of one build with the bastions, and at K beyond on the north was an additional chamber.²⁰ Post-holes and indeed anything to suggest provision for gates or barriers were absent. The remarkable guardrooms are features already known in Iron Age A at St. Catharine's Hill period A (p. 74 and fig. 8), but appear here in an improved form. Though this may owe something to Roman influence, the work is undoubtedly a pre-conquest one of Iron Age B, which is thus seen fully to anticipate the extreme developments of entrance fortification to be seen in the Welsh hill-forts of the Roman period (see p. 94).

¹⁹ Cf. pp. 68, 81, 92.

²⁰ M N indicate intrusive walls of a much later date.

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¹⁹ Cf. pp. 68, 81, 92.

²⁰ M N indicate intrusive walls of a much later date.

PLAN OF THE NORTHERN ENTRANCE OF CADBURY CAMP, NEAR CLEVEDON,
SHOWING THE POSITION OF THE TRIAL-EXCAVATIONS MADE IN 1922.

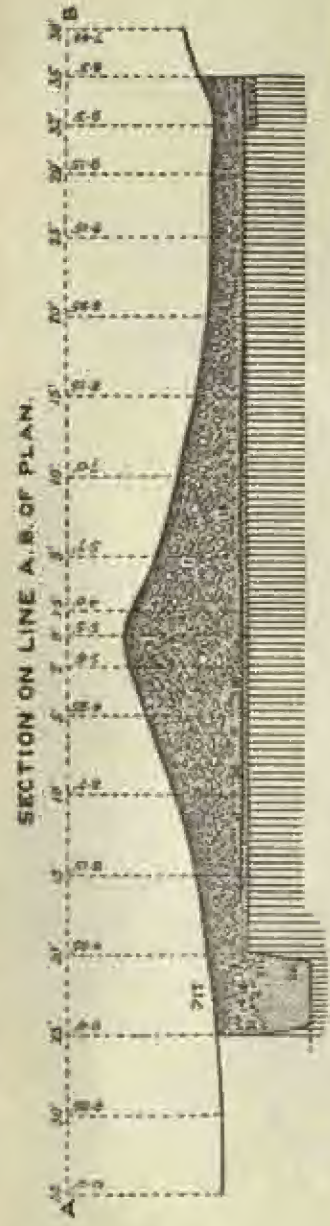
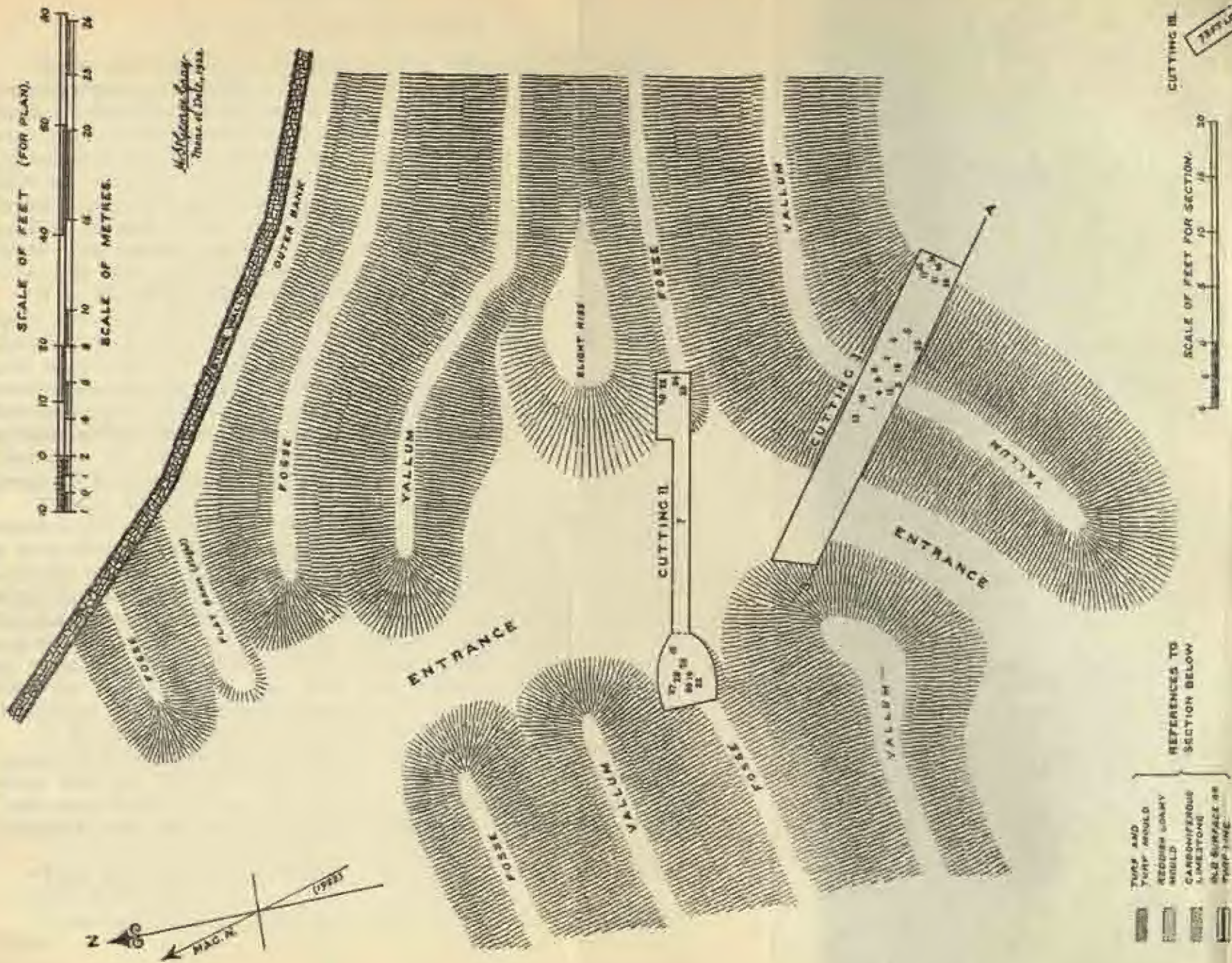


FIG. 12. GARBURY, TICKENHAM, SOMERSET: PLAN OF THE NORTHERN ENTRANCE AND CROSS-SECTION OF THE MAIN RAMPAET
By courtesy of the Somerset Natural History and Archaeological Society

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(d) *The Northern Immigration*

In the 3rd century B.C. immigrants from Gaul appear in eastern Yorkshire and as far south as the Cambridge region. Their culture is parallel to that of our southwestern invaders, with whom their territories were linked by the Jurassic zone across the Midlands. However, hardly any hill-forts can be ascribed to them: in Yorkshire and Lincolnshire there are not many recorded at all. It seems indeed as if the Late Bronze Age people previously in occupation had already begun fort-building, at least on the Cleveland moors, for the promontory fort of ESTON NAB, recently explored by Mr F. Elgee,²¹ seems most probably to be their work, and there are many similar sites.

If so, the initial generalization of this article is yet not seriously upset, for some of the Eston Nab pottery resembles that from the contemporary Heathery Burn cave, where the bronze objects, in common with many from the north as well as the south of England, suggest immigration forming part of those Late Bronze Age movements which have been seen to have shortly preceded and even been partly overlapped by those of Iron Age A; and further, the latter movements themselves reached as far north as Scarborough, and must have influenced the persisting Bronze Age populations.

Though the progress of Iron Age culture and its art of fortification is still very obscure in the north, the Iron Age B invaders seem to have effected a widespread gradual infusion and hill-fort building evidently went with them or their influence, for there are Scottish forts which date from before the Roman invasion, like Burnswark in Dumfriesshire, which was assailed by the Romans, very probably by Agricola, and has an incurved and protected southern entrance illustrated on fig. 7, no. 11. But the best evidence of fortification in Scotland comes from the period during and after the Roman invasions, and the chronology of its earlier beginnings is not as yet fully worked out.²²

In the north of England the result of the Iron Age B infusion appears at the Roman invasion as the confederacy of the Brigantes, whose forts are referred to by Juvenal. One of these, WINCOBANK CAMP near Sheffield, has been excavated: it yielded no traces of habitation, and has two concentric ramparts consisting of an earth

²¹ Elgee, *Early Man in N.E. Yorkshire*, 1930, 152 ff. Detailed report of the excavations forthcoming.

²² I have not presumed to include any Scottish forts in the lists or maps here appended.

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bank covering a wall of dry masonry with carefully-built facing and charred rubble core, and enclosing $2\frac{1}{2}$ acres. As a little Roman pottery was found very near the bottom of the ditch, it cannot long antedate the Roman conquest, and may be ascribed to the wars of the 1st century A.D.

(e) *Conclusions*

Though fort-building may have anticipated the Iron Age B immigration in the north, its spread there may certainly be mainly connected therewith. However, tribal organization here before the coming of the Romans does not seem to have advanced far enough to promote a great deal of such work.

The case is otherwise in the southwest and west, where the invaders from the 4th century B.C. onwards produced a multitude of hill-forts, culminating in the greatest and most complex works known.

Their number and strength, whether, as almost always, permanently inhabited, or like perhaps Corley and in the north Wincobank, rather 'camps of refuge', would seem to point to an organized state of tribal society, in which warfare, though no doubt intermittent as ever, played a larger part than in Iron Age A. Whether this was due merely to inter-tribal strife or to the necessity for repression of the natives by the Celtic invaders is doubtful, but the latter must after a time have ceased to operate, for the people certainly became largely a homogeneous blend with a strongly persistent pre-Celtic strain.

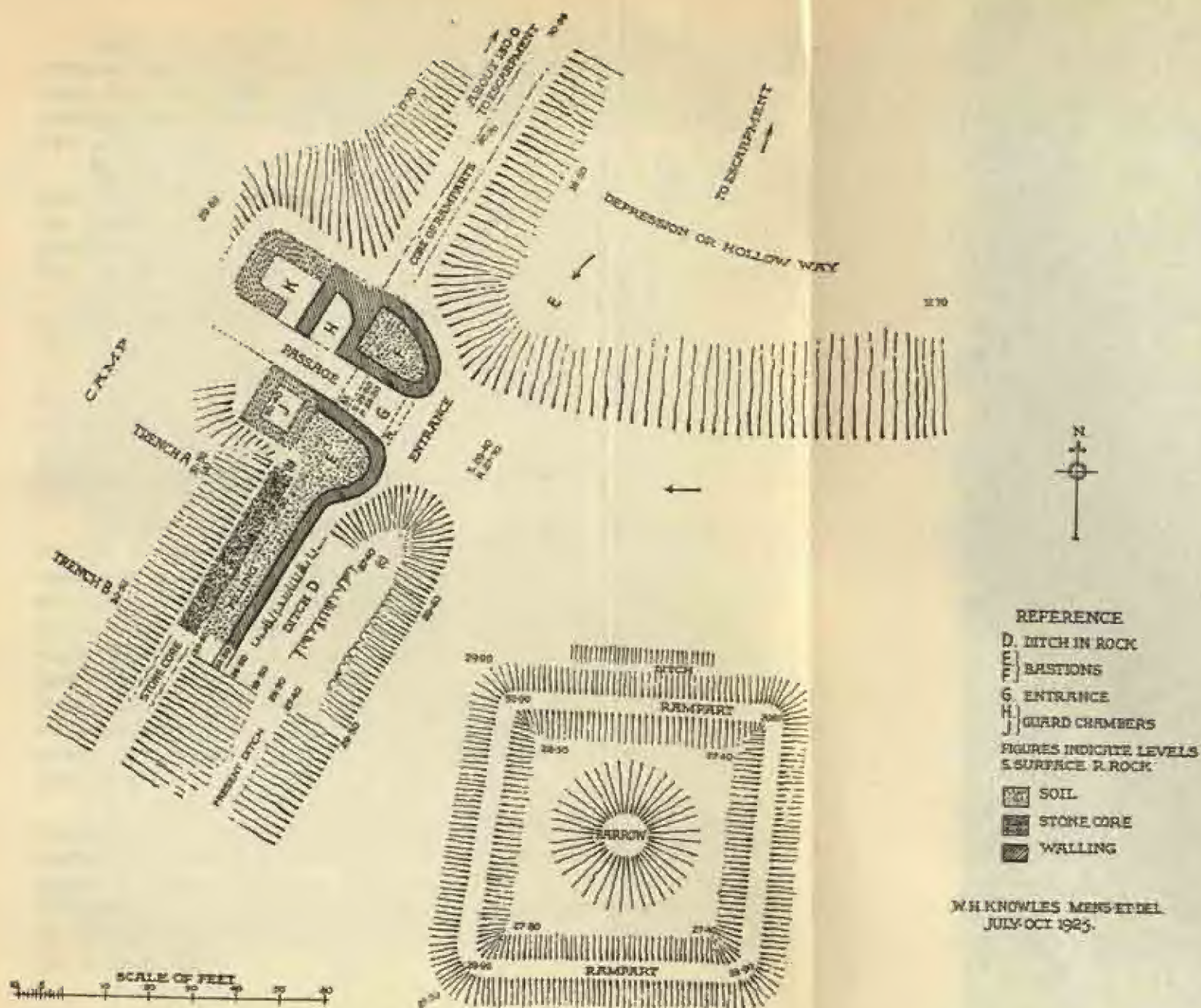
It is conceivable that some late Iron Age B works were put up to resist attack by the invaders who followed.

IRON AGE C

(a) *The two Belgic invasions*

Iron Age A in most of southeastern Britain was at last ended by an invasion of Belgic tribes from northern Gaul, who appeared in Kent about 75 B.C. and had penetrated well to the north of the Thames by the time of Caesar's expeditions twenty years later. They subsequently overran Essex, and their maximum extent in the early 1st century A.D. reached to the Fens and into Northamptonshire on the north and possibly to the Cherwell valley on the east.²³

²³ Their typical pottery is the pedestalled ware of the Aylesford and Swarling cemeteries, whereas the second invasion is characterized rather by bead-rim vessels.





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Later, after Caesar's conquest of Gaul, a second Belgic invasion of refugees from the Roman power took place further west, and spread from the Hampshire harbours into Hants, Berks, and Wilts, and probably west Sussex, with subsequent extensions into Dorset and some part of Somerset.

But for sequestered districts like north Berks, the only Iron Age area left untouched seems to be east Sussex, where the chief hill-fort, the Caburn, was re-fortified at this time and given the outer rampart and the complex entrance defences shown in fig. 7, no. 8, built in a style like that of Iron Age B. The contemporary culture of the inhabitants, however, is still that of Iron Age A, strongly influenced but not superseded by those of its more advanced neighbours. The outer rings at Saxonbury and Thundersbarrow are likely to be coeval.

The Belgic invaders were of mixed Celtic and German stock, and had inherited other traditions than the Celtic ones of hill-fort building and upland settlement. There is reason to believe that they found woodland and valley settlements at least equally congenial, and their idea of an *oppidum* as a forest stronghold fortified for war-time refuge has been recorded by Caesar.²⁴

The whereabouts of his adversary Cassivellaunus' *oppidum* is still an open question, but it seems clear that the hill-fort did not play the same part in the life of Belgae as in that of their predecessors. This will be clear from the distribution-map (fig. 14) which shows that almost the only hill-forts occupied by them lie on the frontiers of their territory, where fighting was no doubt continual. A few of these were earlier works taken over, but a number were new, and of the Iron Age A forts anyhow most were now abandoned. It has been plausibly contended that the Trundle was superseded by a new city at Chichester on the plain below. Indirectly if not directly Winchester now likewise took the place of St. Catharine's Hill.

The capital of the paramount western Belgic dynasty, that of Commius the Atrebate at Silchester, was indeed strictly speaking a plateau fortification, but though some uncertainty surrounds its earthworks, it cannot really be called a hill-fort, but rather an extensive defended city; and whatever the date of the Lexden earthworks outside the southeastern capital, that of Cunobeline by Colchester, no more can be true there.

²⁴ *B.G.*, v, 21, 1.

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(b) *The known forts and their defences*

To pass to detail, the chief non-frontier fort is BIGBURY near Canterbury, which has the distinction of having been assaulted by Caesar.²⁵ It is a contour-fort overlooking the Stour whose single rampart and ditch enclose some 25 acres with an annexe (8 acres) on the north, with two original entrances, through which runs the Pilgrim's Way, doubtless in contemporary use.

Much material unearthed in gravel-digging, including typical Iron Age c pottery and ironwork and tools of all kinds, illustrates the people's domestic and agricultural life. This Kentish hill-city was evidently deserted some time in the 1st century A.D. in favour of Canterbury, which became the Roman centre, but whether this happened after the Roman conquest or, as at the Trundle and Chichester, before it, is not certain.

In the Cambridge region, Willbury, Arbury Banks, and Wandlebury and War Ditches seem to have been taken over and perhaps re-fortified, and a new hill-fort appears: CAESAR'S CAMP near Sandy, a commanding contour-work above the Ivel, now too much damaged for certainty about its original extent.

Not far to the west lies DANESBOROUGH CAMP, another contour-fort (8½ acres) with a single rampart and ditch and one simple entrance certified by excavation, which dated the occupation beyond doubt. Less success has attended work at BULSTRODE, further southwest along the Chilterns: it is a big double-ramparted fort of 21 acres which certainly suggests a late date, but the scanty pottery found is indefinite and perhaps work of both Iron Age A and C is present.

The other known forts of Iron Age c all belong to the western Belgic area, and cluster along the downs of Berks and Wilts in a line, running down to the Dorset coast, that cannot be anything but the frontier where, for a time at least, they marched with their western enemies. Away from this belt, they have at present not a hill-fort to their name.

Silchester has already been excluded from our classification, but the big defended settlement of CASTERLEY in Wilts has still something of the hill-fort character, though its 68 acres, surrounded by a rather feeble single rampart and ditch and full of internal partition-works, ally it rather to the same town type, and it seems to mark a stage in the Belgic abandonment of the true hill-fort idea.

²⁵ B.G., v, 9, 4 ff.



FIG. 24. DISTRIBUTION MAP OF IRON AGE HILL-FORTS, PERIOD C

A black circle indicates dating-evidence from the defences themselves, a white one from within only. The stippled area represents the maximum extension of the culture, as assumed from known material

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Of its three entrances the southern is shown in fig. 7 no. 7, to be of the simple type: it contained four pits which seem to have held a timber gate-structure, but the curved shape of one of them, as much as 15 ft. long, presents an unsolved problem. A similar simple entrance occurs at OLIVER'S CAMP near Devizes, with four pits which are all intelligible as gate-post holes, though here too there is some doubt about two adjacent smaller holes (fig. 7, no. 4). This is a true hill-fort of the promontory class, enclosing 3 acres.

A larger but similar promontory-fort is WINKELBURY in south Wilts, which has internal partition-works and a big outer rampart and ditch which Pitt-Rivers' excavations dated to Iron Age c, though the site was that of an undefended Iron Age A settlement, as was also the case at Casterley, Oliver's Camp, and perhaps also at OLDBURY, a round contour-fort of 9 acres near Cherhill. Alfred's Castle on the Berkshire Downs has produced Iron Age c as well as earlier pottery,²⁶ but to which phase its defences should be assigned is still doubtful.

Along with Winkelbury, the strongest known Iron Age c work in Wilts is BATTLESBURY, where however the defences have not been dated by digging, but are of a complex type suggesting this period, which was that indicated by the main yield of the pit-dwellings within. Southeast of it across the Wylde is HANGING LANGFORD CAMP, which has produced contemporary material, but from the air at least suggests problems which excavation has yet fully to solve, and there are probably others near by at Bilbury Rings and Stockton Earthworks.

But the Battlesbury defences have better analogies further south along the frontier line in Dorset, where the final occupations of Hod Hill, Hambledon Hill, Spettisbury and Belbury at least must belong to Iron Age c, though the earthworks of these too have not been properly dated, and the significant finds come from their internal area; thus the Hod and Hambledon entrances noticed above (fig. 7, nos. 5 and 9) are still of uncertain attribution.²⁷

In general, there seems to be no special peculiarity in fortification technique that distinguishes the Belgae of Iron Age c. They evidently were capable of producing ambitious works if they wanted them, but very often they were content with quite simple defences no better than those of the feebler Iron Age A forts.

²⁶ Kindly shown me by Mr Stuart Piggott.

²⁷ Cf. p. 81.

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(c) *Conclusions*

Iron Age C witnessed the concentration of political power in the hands of ever fewer British chiefs—finally Cunobeline became paramount over all the south and the southeast. It is natural then, that this period should mark the decline of the hill-fort, the whole idea of which was the setting-up of a fortified centre of tribal life by every little autonomous group at some capital point of its block of usually upland territory.

Politically, the hill-fort, as seen in Iron Age A and B, was the Celtic version of the earlier Greek *πόλις*. The Belgae, in unifying the tribal groups over ever larger areas, took the place in British history of the Hellenistic monarchs, and like them prepared the way for Rome.

The Belgic invasions thus effected a marked discontinuity in tribal life; the old hill-forts were most often deserted, to come, like Cissbury, under the plough. Many open villages of Iron Age A were likewise abandoned, and while some, like Worthy Down, continued, new habitations began to appear on woodland and valley sites. The new cities, where they are known, may be fortified but cannot usually be called hill-forts—the hill-fort is serving its purpose now practically only on the frontiers of the lands the invaders had seized.

The forts of the Cambridge region, for instance, lie just within the belt running across Newmarket Heath where their pottery and coin-distributions would seem to delimit them from the Iceni. And if any forts are discovered to be their work away from such frontier lines, they will very possibly recall temporary frontiers preceding the attainment of their maximum of expansion—*e.g.* Wallbury in Essex should be just about on the boundary between the Belgic Catuvellauni and their enemies the Trinobantes of Essex in the time of Caesar. For the rest, the big British kingdoms of the century following cannot have been formed, even were they maintained, without fighting—Caesar records four kings in Kent, and Bigbury was evidently the stronghold of one of them.

The crop of suspected forts of this age in Dorset agrees with pottery and coin-evidence in suggesting that the Belgic penetration there was effectively retarded, and the line thence northward across the Wiltshire downs faces west towards Somerset, where the Celts of Iron Age B are believed to have been suffering Belgic invasion in the years just before the Roman conquest.

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BRITAIN AND THE ROMAN PEACE

The Belgae of the southeast fought hard but soon went down before the Romans, and the next stage of the conquest of which we hear is in the southwest, where Vespasian with the IInd Legion had to set himself to take more than twenty hill-forts by storm.²⁸ These were no doubt mainly in Wilts and Dorset, and one of them was certainly Hod Hill, where a Roman camp was entrenched in a corner of the old fort.

But the real military problem for Rome lay in the highlands of the west and north, where the Iron Age B hill-fort tradition was effectively alive. In fact, it is only in the Roman invasions that northern fortresses like Traprain Law seem to have been seriously established, and they lasted some hundreds of years after the withdrawal of the Roman power from Scotland.

In Wales the story is rather different. Before A.D. 80 Frontinus and Agricola had stamped resistance out, and forty years later most of the garrisons were sent away for service on the northern *limes*. It is significantly not long after this that native hill-fort building, in North Wales at least, received a great impulse. Dinorben, Tre'r Ceiri, Pen-y-Cordynn, and a number of others have had the successive occupations of their massive defences dated to the middle and later Roman period. Dr Willoughby Gardner has fully described the character of these in a most notable paper,²⁹ and it is clear that they embody the great tradition of Iron Age B fort-building.

The northeast Y-Cordynn entrance (fig. 7, no. 12) is an extreme development of the old inturned type, with rectangular guard-house bays which, while they suggest imitation of a Roman gate-plan, recall the guard-houses of St. Catharine's Hill and Leckhampton.

The prominence of these Welsh hill-forts during the Roman dominion has been accounted for by Dr Wheeler³⁰ by the theory that their occupants, so far from being evicted by the government, were created a native militia to hold their own citadels for the Empire against the oversea raider.

This stroke of frontier policy sets Wales in sharp contrast to the rest of the province, where the abandonment of the old tribal hill-forts,

²⁸ Suetonius, *Vespasian*, 4: 'superque viginti oppida'.

²⁹ *Arch. Camb.*, Dec. 1926, 221.

³⁰ *Roman and Native in Wales*, Cymmrodorion Soc., 1920-1, 40.

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already begun in the Belgic period in the south, was practically universal by the end of the 1st century A.D., and Romano-British cantonal towns like Canterbury, Winchester, Wroxeter, and Caerwent were made the centres of the local government units into which the tribes were turned.

But the troubled years of the shrinkage of the Roman power inevitably brought some reversion to the conditions of barbarian life that had preceded its establishment. While indeed the Welsh forts were deserted by the 6th century at the latest, England did not settle down as an Anglo-Saxon country all at once.

Groups of the old provincials protected their settlements by dykes, and two cases at least are known where pre-Roman hill-forts were brought once more into commission, and their defences strengthened to shelter remnants of the Romano-British against their many foes. This happened, it seems, in the 4th century A.D. at Cissbury, and at Lydney in the 5th. The Dark Ages were in many ways the Early Iron Age restored.

Thereafter, though some medieval castles and their attached towns may, like Old Sarum and possibly Edinburgh, have come to stand within old prehistoric defences, the hill-fort phase of history, as we may call it, came in this island to an end.

APPENDIX

LIST OF HILL-FORTS PROVIDING EVIDENCE OF EARLY IRON AGE DATE

In this list, the letters A, B, and C stand for the three phases of the Early Iron Age, and follow each fort according to its assignation, in brackets if this is not based on excavation in the actual defences. The literary references are the most accessible in each case, save that the Victoria County History (*V.C.H.*), and the Earthworks Committee's Reports (*E.C.R.*), are not referred to unless the only or most convenient authority.

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BUCKINGHAMSHIRE. Bulstrode (A, c), *Rec. Bucks*, xi, 283. Danesborough, c, *Rec. Bucks*, xi, 363.

CAMBRIDGESHIRE. Wandlebury (A, c) and War Ditches, A, c, Fox, *Cambridge Region*, 109, 114, 134, 136, 139.

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- DEVON. Cranbrook Castle (B), *Trans. Devon Ass.* XXXIII, 131. Hembury, B, report by Miss D. M. Liddell forthcoming. High Peak Hill (B), Radford, *Our Prehistoric Camps*, 1.
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- GLOUCESTERSHIRE. Leckhampton, A, B, *Trans. Bristol and Gloucs. A. S.* XLVII, 81. Lydney, B and post-Roman, report by Dr R. E. M. Wheeler forthcoming. Meon Hill (B) and Salmonsbury (B), *Proc. Soc. Ant.* XX, 183.
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- HEREFORDSHIRE. 'British Camp', Herefordshire Beacon (B), *Journ. Roy. Anthropol. Inst.* X, 323. Midsummer Camp, B, *ibid.* 319, and unpublished.
- HERTFORDSHIRE. Arbury Banks (A, C), Fox, *Cambridge Region*, 109, 135, 139. Willbury (A, C), unpublished.
- KENT. Bigbury (C), Jessup, *Arch. of Kent*, 144, 257.
- MONMOUTH. Llanmelin, B, *Ant. Journ.* XI, 70 (interim report by Mr V. E. Nash-Williams).
- NORTHAMPTONSHIRE. Hunsbury (B), *V.G.H. Northants*, 1, 147.
- OXFORDSHIRE. Chastleton, A, report by Mr E. T. Leeds forthcoming.
- SOMERSET. Cadbury Castle, B, *Proc. Som. A. S.* LIX, 1. Cadbury, Tickenham, B, *ibid.* LXVIII, 3. Cannington Park (B), *ibid.* LIX, 12. Dolebury, B, *ibid.* LXIV, xliii; LXVIII, lxii. Ham Hill (A?), B, excavation by Mr H. St. George Gray proceeding; interim notices *ibid.* LVIII, LXVII, LXX, LXXI. Kingsdown, B, *Arch.* LXXX (forthcoming). Solbury Hill, A, *Antiquary*, XLV, 326, 419, 451. Worlebury, B, Dymond and Tomkins, *Worlebury*.
- SURREY. Wallington, A, *Journ. Roy. Anthropol. Inst.* N.S. VIII, 387.
- SUSSEX. Beacon Hill Camp, Harting, (A), Curwen, *Prehistoric Sussex*, 72. Caburn, A, *Arch.* XLVI, 452; *Suss. Arch. Coll.* LXVIII, 1. Cissbury, A and late Roman, *Ant. Journ.* XI, 14. Hollingbury (A), *Brighton and Hove Archaeologist*, 1, 18. Saxonbury, A, *Suss. Arch. Coll.* LXXI, 223. Thundersbarrow (A), *ibid.* 258. The Trundle, A, *ibid.* LXX, 33, and forthcoming further report by Dr E. Cecil Curwen. Wolstonbury, A, *ibid.* LXXI, 237.

HILL-FORTS

WARWICK. Corley, B, *Trans. Birmingham A. S. Lit.*, ii, 282.

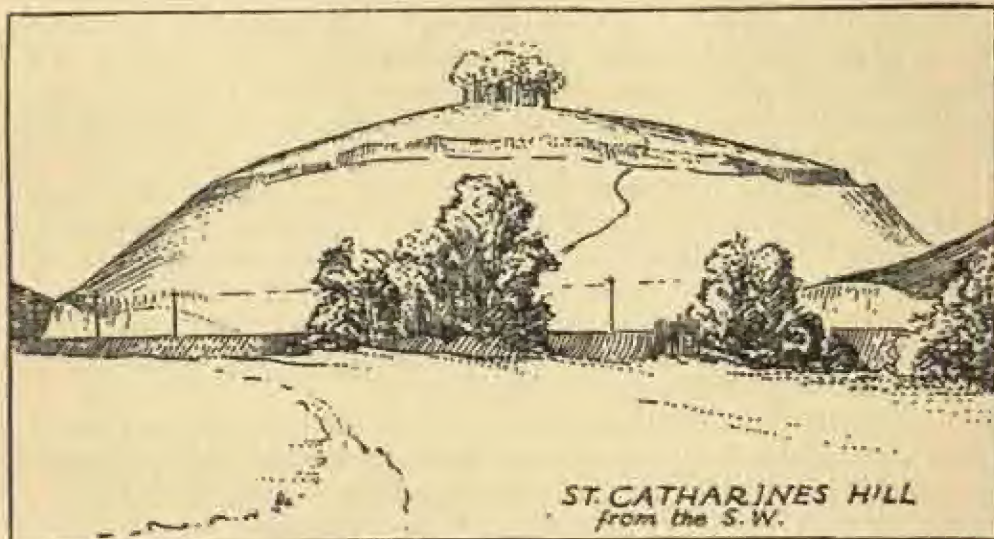
WILTSHIRE. Battlesbury (c), *Wilts Arch. Mag.* XLII, 368. Casterley, c, *ibid.* XXXVIII, 53. Figsbury, A, *ibid.* XLIII, 48; *Wessex from the Air*, 84. Hanging Langford (c), *ibid.* 116. Lidbury, A, *Wilts Arch. Mag.* XL, 12. Liddington Castle, A, *ibid.* XXXVIII, 576. Oldbury (c), *Devizes Mus., Cat.*, 95. Oliver's Camp, c, *Wilts. Arch. Mag.* XXXV, 408. Winkellbury, c, Pitt-Rivers, *Excavations*, II, 233; *St. Catharine's Hill*, 78, 166.

YORESHIRE. Wincobank, B, *V.C.H. Yorks*, II, 8.

The total number of hill-forts in this list and the three distribution-maps is 69. The defences of 37 have been definitely dated to at least one phase of the Early Iron Age.

Note on Literature

There is no authoritative general work on Iron Age hill-forts. The best brief introduction is *Wessex from the Air*, p. 8. In *St. Catharine's Hill* I have attempted a summary, with special reference to Iron Age A. For Iron Age C see *The Belgae in Gaul and Britain* in *Arch. Journ.* LXXXVII (forthcoming). Iron Age B in the southwestern counties has been summarized by Radford, *Our Prehistoric Camps* (Devon Archaeological Exploration Society, 1930). The best detailed works other than actual excavation reports deal with particular districts, pre-eminently Dr Williams-Freeman's *Field Archaeology as illustrated by Hampshire*, Dr Cyril Fox's *Archaeology of the Cambridge Region*, Dr Cecil Curwen's *Prehistoric Sussex*, and Mr Heywood Sumner's *Cranborne Chase and New Forest*. The evidence is being further summarized by counties in the series of County Archaeologies edited by Mr T. D. Kendrick.



Notes and News

LEAC CON MIC RUIS, co. SLIGO

This notable megalithic monument is in the Deer Park, four miles to the east of the town of Sligo, on the summit of an isolated limestone ridge and between 400 and 500 feet above sea level.

Six miles away to the southwest is the wonderful Carrowmore assemblage of dolmens enclosed by circles, consisting even now of 85 such monuments in an oval area of less than a mile and a quarter by half a mile, while many more are known to have disappeared. This group and indeed the whole district is dominated by the great cairn on the summit of Knocknarea, 600 feet in circumference and over 30 feet high.

Leac Con Mic Ruis lies approximately east and west and consists of an oval central area contained by upright stones averaging 4 feet in height and approached by a passage way on the south. At the west end is a 'trilithon' portal leading to an antechamber and chamber; at the opposite end is a pair of chambers approached in the same way through separate portals and antechambers. Surrounding the monument is a mound, now remaining as a fairly level platform extending about 10 feet beyond the main uprights, and then sloping down to the original ground level.

Excavation has produced unburnt human and animal bones and shells and it may safely be assumed that the monument is sepulchral.

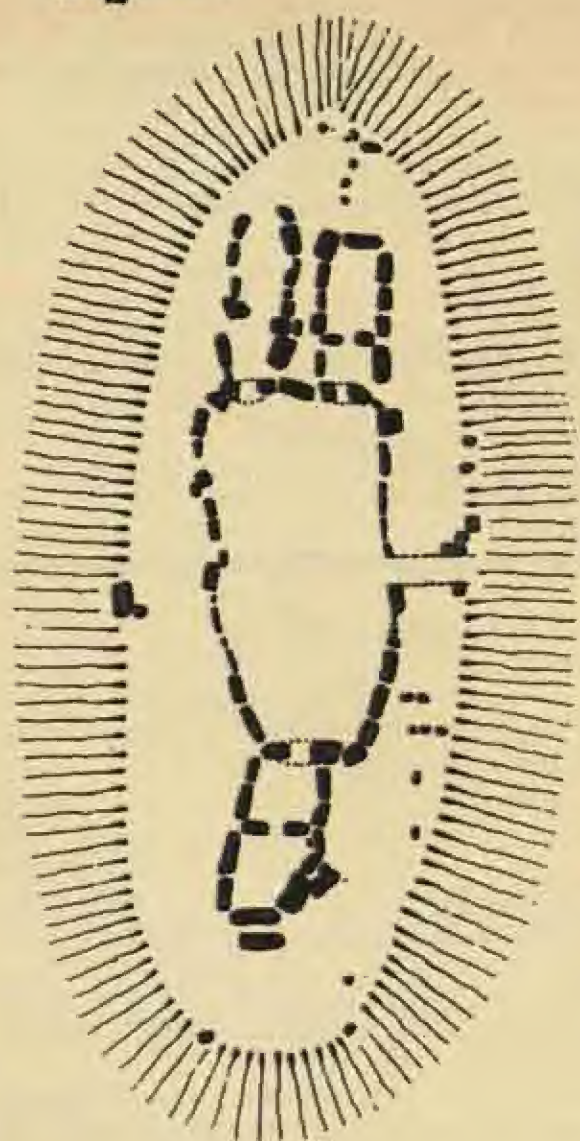
A plan of a monument at Ballyglass, co. Mayo, is published by W. C. Borlase in his *Dolmens of Ireland* resembling, but apparently smaller than, Leac Con Mic Ruis. Here is another oval, apparently approached by a passage and having a chamber and antechamber at either end, and a third opposite the passage.

Leac Con Mic Ruis has been the subject of much speculation. A plan, description and references are given by Borlase, and the excuse for publishing a fresh plan is that the encircling mound has not previously been satisfactorily recorded. It has been made by Mr Stuart Piggott from the one already published, supplemented from notes by the writer. The dotted lines suggest the former outlines of the entrance

PLATE I



LEAC CON MIC RUIS, FROM THE SOUTH
Pg. W. J. Hoop



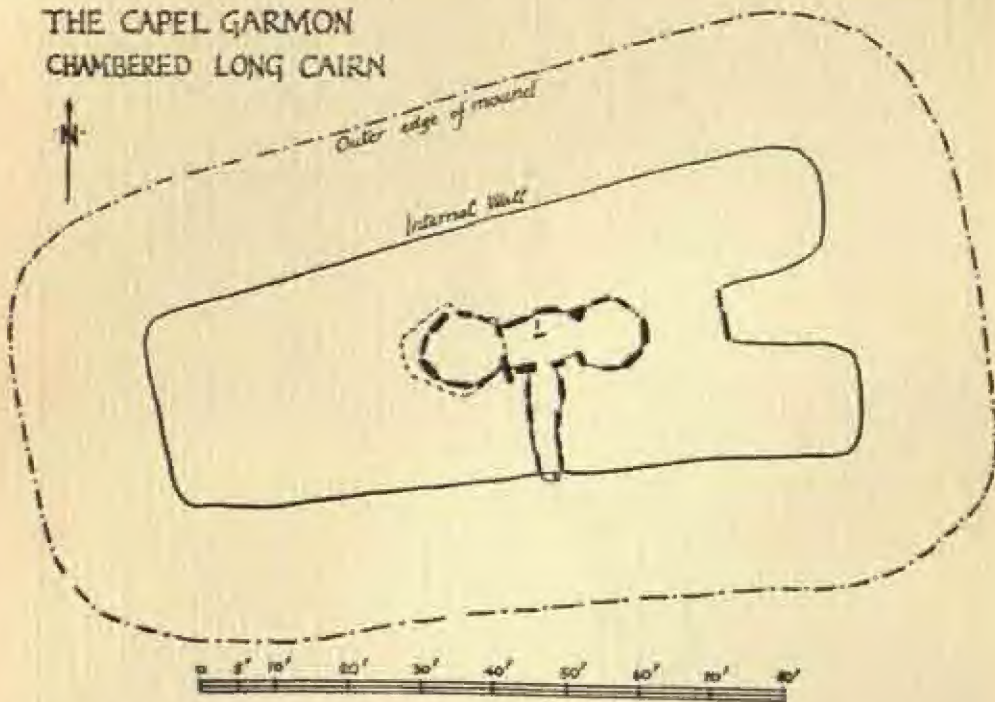
SKETCH PLAN of MEGALITHIC STRUCTURE
of LEAC CON MIC RUIS, Co. SLIGO.

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passage and the few upright stones which still stand along the crest of the mound probably represent an encircling wall. The existence of the passage is almost a certainty; of the wall it can only be said that while it is extremely probable that it did exist, the question can only be settled by excavation.

Other structural features present greater difficulties. To what extent was the monument covered by its mound? The internal area is very large, and, although the chambers at either end and the

THE CAPEL GARMON
CHAMBERED LONG CAIRN



entrance could easily have been spanned by corbelling or roofed by slabs—one cover stone still remains—the great central space 50 feet long could scarcely have been so treated.

The monument stands on the bare moorland and although there are a few stone walls and old banks in its neighbourhood, there is nothing to suggest the removal of the vast cairn which would normally have covered such a megalithic monument. The surrounding mound is evenly disposed and in no way resembles a spoil heap. It seems likely then that the central area was merely filled with stones or, less

NOTES AND NEWS

probably, was left open, and the chambers and passage roofed and covered by the encircling mound. The same problem is presented by the monument on Mull Hill in the Isle of Man, where there is a curious arrangement of pairs of cists ranged in a circle round a central area, each pair having a passage. Here also the cists were presumably hidden in an encircling mound which still exists in part.

Were not speculation such a dangerous luxury in dealing with these complicated problems of megalithic plans it would be tempting to suggest that the Ballyglass monument might represent a transition from the Deer Park type to that of Mull Hill. Despite the danger, however, one purpose of these notes is to put forth the suggestion that Leac Con Mic Ruis represents a 'degenerate' long barrow, a step farther removed from the primitive form than the Denbighshire cairn at Capel Garmon. The same elements occur in both monuments; chambers opening from a central area which is approached by a passage and the whole surrounded by a ceremonial wall, which at Capel Garmon was buried in the cairn which completely covered the monument. There however the wall is interrupted by a false entrance, which is not now represented in the Irish monument—unless it be buried in the mound.

Another abnormal long barrow was examined by Professor Macalister and others on Carrowkeel mountain, also in Sligo. There the design bore little resemblance to that of Leac Con Mic Ruis, but its existence proves that the knowledge of the long barrow type of grave was to be found among the inhabitants of Sligo in the second millennium B.C.

W. J. HEMP.

THE GOODWIN SANDS

About four miles southeast of Ramsgate in the Isle of Thanet, the Straits of Dover are occupied by an area of shifting sand. At low water these sands are exposed to a height of between four and seven feet. They are then, at any rate in places, firm and hard, and it is possible to land and walk about on them. Since 1590, and probably before then, they have been called the Goodwin Sands, and two legends have been related of them.

The first legend is recorded by John Twine,¹ whose Latin may

¹ Joannis Twini Bolingdunensis, *Angli, de rebus Albioniciis, Britannicis atque Anglicis, commentariorum libri duo* . . . Londini, 1590, page 27. [Bodleian shelf-mark, 8vo. T. 52, Art].

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be freely translated as follows :—'Now of Lomea, or as it is now called the Goodwin Sands, about which I have read in certain writers, the following may be said. It was once a very fertile land, with many pastures ; it was of lower elevation than Thanet, from which the crossing by boat was of some three or four miles. This island was overwhelmed by an extraordinary gale, combined with a storm of rain and an unusually rough sea. A bank of sand was thrown up and there was formed an area intermediate in character between dry land and sea'. The date of the storm is elsewhere given as 1099.

The second legend is to the effect that Tenterden steeple was the cause of the Goodwin Sands.²

The first legend has, it seems to me, an appearance of veracity. The name of Lomea looks like a good old English word meaning Loamy Island ; and this would have been a good description of such an island as might have existed. It could not have been other than low lying and clayey, for geological reasons. Twine's description, moreover, bears out this inference from geology. The name Lomea could not have been invented ; the only other likely explanation is that it applied, not to the Goodwins, but to some adjacent, low lying portion of the mainland. If so, the name might survive as a field-name on old maps of the region north of Sandwich.

The storm of 1099 is actually recorded in the *Anglo-Saxon Chronicle* and Sir Charles Lyell,³ referring to this, remarked that 'the last remains of an island, consisting, like Sheppey, of clay, may perhaps have been carried away at that time'. Borings have revealed, under the sands, deposits of clay resting, at a depth of about 20 feet, upon a floor of solid chalk. These clays may be of Eocene age or they may be more recent.

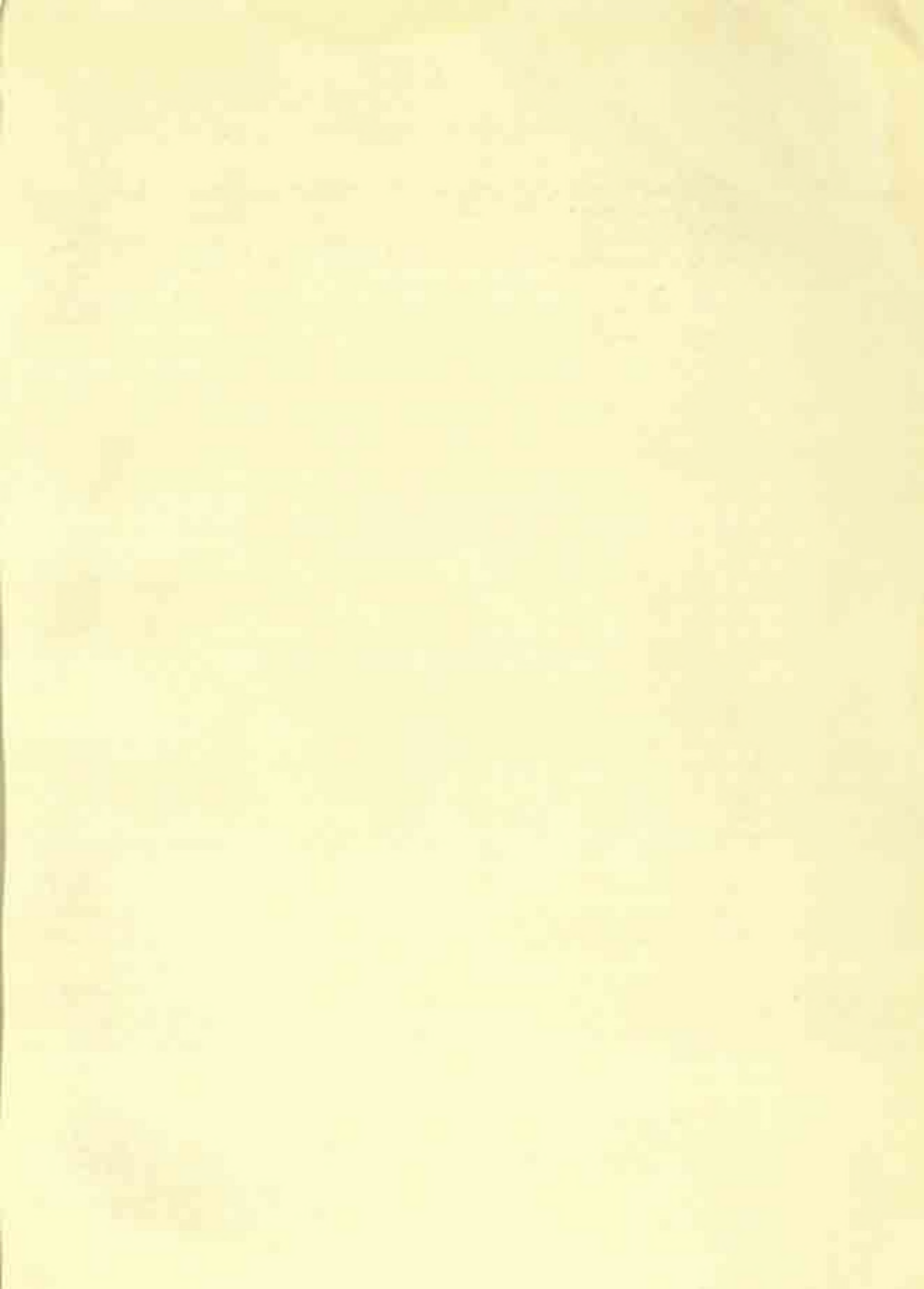
The strongest argument against the existence of Lomea is that there is no mention of it in Domesday.

The Tenterden legend is rationalized by Gough,⁴ probably following Lilburne, as follows :—'The steeple [of Tenterden] is pretended to have occasioned the Goodwin sands from the neglect of an Abbot of Canterbury to keep up the sea-walls, applying the money appropriated to the purpose to build this steeple'. Or the misappropriation may have applied to some site on the mainland. The selection

² Richard Lilburne, *Topographie of Kent*, 1659, pp. 262-3.

³ *Principles of Geology*, 8th edition, 1853, p. 314.

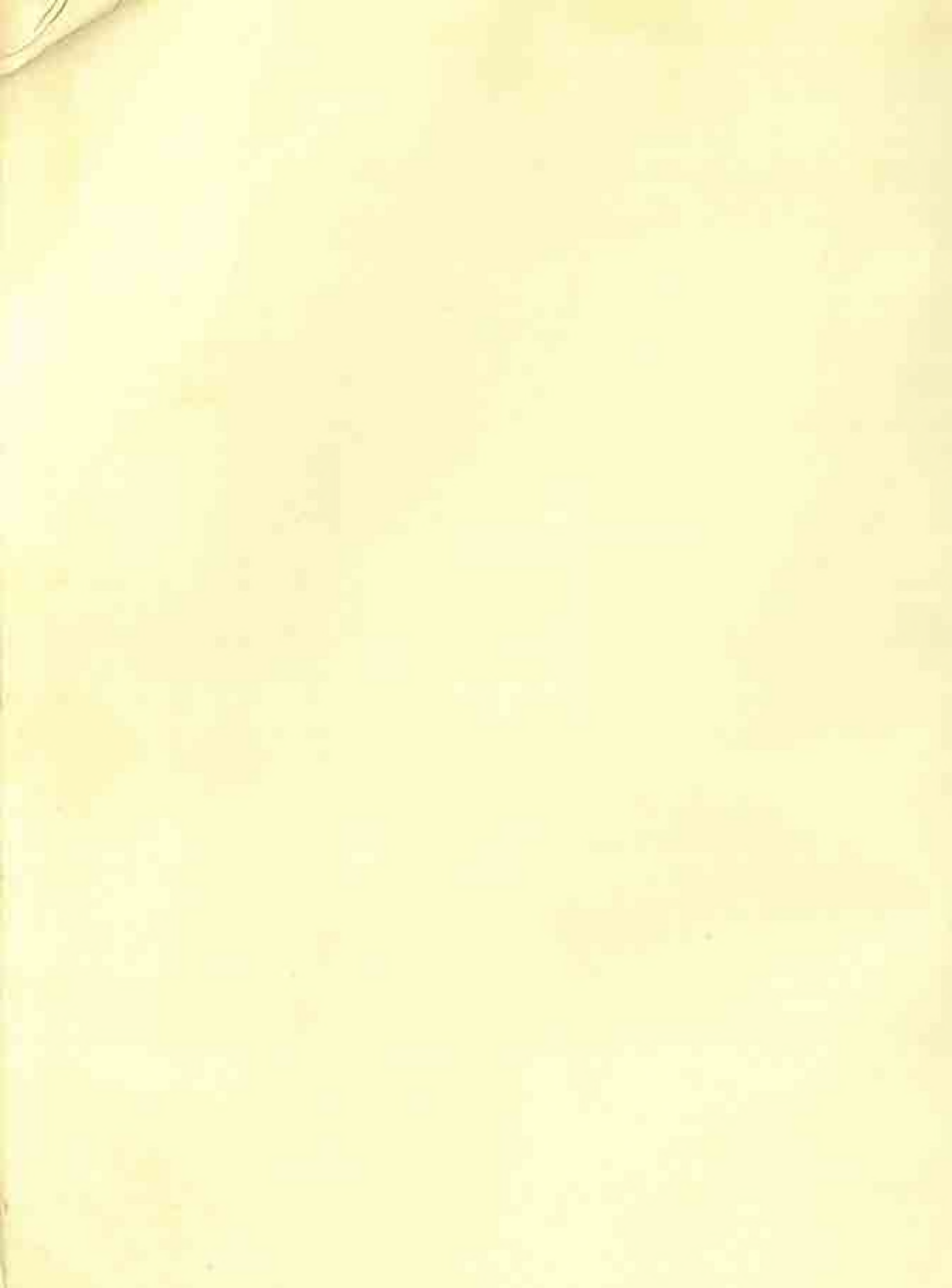
⁴ Gough's *Camden*, 1789, i, 249.





LEAC CON MIC RUTS, VIEW FROM WESTERN CHAMBER
Ph. W. S. Jones

facing p. 102



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of Tenterden however is curious ; for the name, originally Tenetwara-den, meant the den or forest pasture of the people of Thanet ; and Thanet is the part of England immediately opposite the Goodwins. It would therefore be the place of embarkation for Lomea, as Twine hints.

The theory—it is little more—of a submerged island is a fascinating one, but it is based upon the flimsiest evidence. If the clay beneath the sand is really of geologically ancient origin—and even this is doubtful—there must have been an island there in the Submerged Forest period, when the land stood at least 60 feet higher in relation to the sea, and it may well have been occupied by neolithic man. There seems however to be at least 15 feet of sand everywhere before the clay is reached, and under present conditions the surface of this clay would nowhere be less than eight feet below *low* water-mark. This necessitates an erosion of eight feet of clay plus the tidal rise between low and high water ; such erosion must have occurred between the time of the submergence and the accumulation of the sand. It seems possible but unlikely ; and the verdict must be an open one.

O.G.S.C.

EXCAVATIONS IN ITHAKA

Mr W. A. HEURTLEY, Assistant-Director of the British School of Archaeology at Athens, sends the following report :—

During the months of August, September and October 1930, excavations were carried out in the north part of the island of Ithaka by the British School of Archaeology at Athens. Four points were explored :—the hill of Pelikata ; the bay of Polis ; the so-called ' School of Homer ' ; the area near the modern village of Stavros.

On the hill of Pelikata, an extensive settlement of the Early Helladic culture (the Early Bronze Age culture of Greece) was discovered. Owing to severe earthquakes the remains are quite ruinous ; little more than heaps of stones. In one area however these heaps of stones have been levelled to make a wide space on which must have stood houses of wattle and daub on stone foundations. Evidences of occupation here were bored stone axes, many clay spindle whorls and masses of pottery. A circuit wall of large irregular blocks of stone ran just below the flat summit of the hill, enclosing part of the settlement, and some of this wall is still preserved *in situ*, as well as part of a paved road about three metres wide which ran alongside. Several burials in large jars were found under the floors of houses. Besides bones

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the jars contained funerary objects, blades of flint or Melian obsidian, stone beads (one was of gold) and small vases, and in one case, the clay model of a bull. Two sherds with curious incised markings were found: one has what looks like a rough drawing of a ship. Since a certain amount of Middle Helladic (Minyan) and late Mycenaean pottery was found mixed with the Early Helladic, it seems likely that the Early Helladic culture in this part of Greece lingered unchanged till Late Helladic times (*c.* 12th century B.C.), and, if this is so, the heaps of stones may represent the ruins of buildings that were standing at the time of the Trojan War. However that may be, the site was not re-occupied (except for burials in the late Greek and Roman periods) until comparatively modern times.

In the bay of Polis, a cave-sanctuary was explored. This cave, of which the roof had fallen, was plundered some sixty years ago, and in 1904 was partially excavated by Dr Vollgraff. The stratification therefore was confused and could give no help to the dating of the mass of votive objects, mostly pottery, which were recovered. Most of the latter however consist of recognizable types which show that the sanctuary was frequented from the Early Bronze Age to, at least, the first century B.C. Thus the Early, Middle, and Late Bronze Ages (Mycenaean), the Proto-Geometric, the Geometric, the Proto-Corinthian, the Corinthian (among other vases by a finely decorated plate) and later periods are all represented.

Inscriptions include the words *Εὐχηνὸδυσσεύ* ('my vow to Odysseus') on a fragment of a votive terracotta showing part of the head of a goddess (Artemis?); three sherds have parts of the word *Νυμφαί* ('to the Nymphs') inscribed on them; one complete inscription in Latin rather roughly scratched on a triangular tile-fragment dates from the year 35 B.C. (the names of the consuls being given) and records a visit on the 1st of October of that year by Epaphroditus an unguent-seller from Rome.

Of the small objects, the most interesting is an ivory pendant representing a small standing figure (3.2 cm. high), around whose neck and arms is passed a bronze cord. Fragments of bronze and iron weapons were common.

The cave has now been fully explored down to the sea-level. But, owing to subsidence, the original floor-level of the cave is below the sea, and could not be reached. One hour's work however in a very limited area sufficed to recover several vases from the water, and there is little doubt that, if the water could be excluded, objects of

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great interest could be found, possibly undisturbed. But to do this, considerable expense would be involved.

At the site called the 'School of Homer' further remains of imposing buildings were discovered, but have as yet been only partially cleared. The objects found in this area belong to the third century B.C. and later.

Finally, in the region of Stavros, were found part of a large circuit wall and numerous tile-graves, to be assigned to the fourth or third century B.C. One of the latter contained a complete skeleton, between whose knees rested a skypos with incised decoration below the rim.

Thus the excavations reveal that the north part of the island was inhabited from very early times, but, except for the objects from the cave-sanctuary, there is at present a gap in the archaeological records for the period between 1100 to 400 B.C. It may be that this part of the island remained uninhabited during that period; in any case, further exploration is much to be desired.

The excavation was financed by means of funds collected by Sir Rennell Rodd from friends and lovers of Homer. It is hoped that it will be possible to continue them next year.

AMBER

Mr Harry G. W. D'ALMAINE, F.S.A., writes:—

I am trying to find the approximate western boundary of the mighty forest of extinct pines (*pinus succinifer*) that, for probably thousands of years, shed those golden tears which time has fossilized and transformed into the semi-precious stone known to us today as Amber.

This forest appears to have spread over the land now covered by the North Sea, across Holland, Denmark, south Sweden, north Germany, over what is now the Baltic (where the chief finds of amber have always been made), on possibly into Finland and Russia and perhaps even into western Siberia. The eastern boundary probably never will be found, but the western end does not present the same difficulties. Plenty of amber has been dredged up by fishermen in the North Sea, and plenty has been found washed up on the coasts of Norfolk and Suffolk, notably between Cromer and Aldborough.

The *pinus succinifer* must therefore have grown on the land, now covered by the sea, up to a distance not so very far from our present coast line. But did this extinct tree ever grow further west and on English soil?

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I have made considerable efforts to find out whether any amber has been ever dug up from the existing soil of Norfolk or of Suffolk ; or for that matter anywhere else on our East coast as, if so, this would tend to prove that the forest extended even into our country. I can however find no evidence that any amber has been so found ; and that at present available tends rather to show that the great amber forest must have come to an end somewhere in the North Sea region not so very far from England.

Perhaps some of the readers of ANTIQUITY may be able to throw a little light upon the subject.

THE CAR DYKE, LINCOLNSHIRE

Mr C. W. PHILLIPS writes :—

The Car Dyke, the great catch-water drain 50 odd miles long, which runs along the western edge of the Witham and Welland Fens in Lincolnshire and which joins the Witham to the Nen, has long been one of the minor problems of British archaeology.

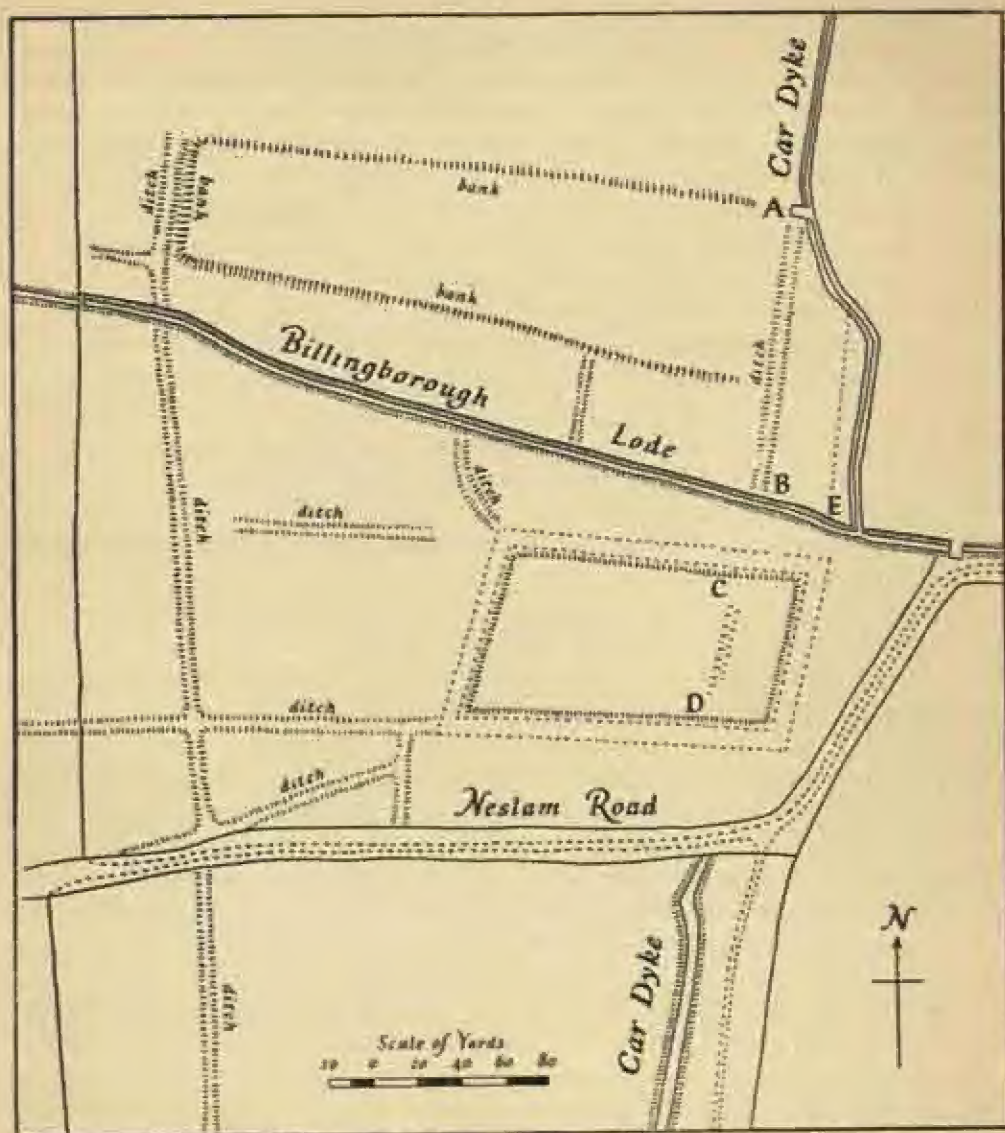
It is obviously artificial, and also of considerable age, though it is just this question of age which has remained obscure. In many places the watercourse has been destroyed and ploughed out of existence, and its present condition presents every condition from that of a navigable canal to a mere trace in arable land.

It has generally been assumed that the canal was constructed by the Romans, partly as a catch-water drain to prevent the rainfall of the southern Lincolnshire oolite ridge from entering the fen levels, and partly as a canal for water transport. No excavations have ever been carried out to solve the problem of the exact period of construction, and the only satisfactory approach to the problem has been the collation of the evidence of incidental discoveries connected with it by the late Archdeacon Trollope.¹ Most of the eighteenth century antiquaries indulged in speculations about it, and all were convinced of its Roman character, but they adduced no proofs.

Sufficient documentary evidence remains to show that some sections of the canal were in use for transport in the 14th century, and the discovery of a lost load of dressed Barnack stone in its bed at Morton throws further light on this. There is also the popular belief that 'Great Tom', the largest bell in Lincoln Cathedral, was

¹ Edward Trollope, *Sleaford and the Wapentakes of Flaxwell and Aswardhurn*. London and Sleaford, 1872.

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THE CAR DYKE, LINCOLNSHIRE

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brought thither from Peterborough by canal, and although this may not be strictly true, it may be reminiscent of the days when the Car Dyke was still put to such uses.

The magnitude of the conception of the whole work, its regularity, and the occurrence of Roman relics at various places along its course all point to a Roman date for its construction, but an opportunity has now presented itself to clear up the whole question once and for all.

On the eastern side of Sempringham parish, eight miles north of Bourne, the Car Dyke is in the middle of a straight run of nearly a mile and a half, and this range shows it in most states from a fair sized watercourse to a mere mark in the fields.

At the north of the point where the road from Sempringham to Gosberton crosses the line of the dyke there is a large rectangular moated enclosure in a grass field. Though called a 'Roman Camp' by the Ordnance Survey, it is almost certainly not older than the Middle Ages if the few relics of pottery turned up by moles are any guide. The enclosed space is some 400 by 180 feet in area, and the significant fact about its situation is that its eastern end overlies the line of the Car Dyke by 75 feet. The appended plan will give a view of the position. The Car Dyke approaches from the south as a wide ditch, 18 feet across at the bottom, and almost completely choked, though in winter it regularly fills with water. Well-marked banks are thrown out on either side, and the whole watercourse is still impressive in its decay. On encountering the line of the modern road it kinks eastwards and at once completely disappears, only showing again in obviously recognizable form after its line has passed under the east end of the enclosure, and across the line of the Billingborough Lode, which is a natural brook, much deepened and embanked of late years. Here it appears again, for from B to A there is a very well-marked trace of the usual width across the grass close to the north of the Lode. It is now quite dry, but preserves the general line of the Dyke so closely that it must be a disused section of it. From A a wet ditch bends eastward a little from the line of the Dyke and joins the Billingborough Lode at E, and the Ordnance Map shows a dotted continuation round the east end of the earthwork to join the Car Dyke south of the road. The only existing evidence south of the Lode that there ever was such an alignment of the Dyke round the earthwork is that at the point of its disappearance south of the road, the Car Dyke makes the sudden bend eastwards which has already been mentioned.

A close study of the ground shows that the original Car Dyke

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was in existence before the earthwork was thrown up. Between the points c and d there are clear signs of a subsidence across the area enclosed by the moat, and the growth of a number of reeds along this line shows that the subsoil is very damp.

It is the writer's contention that this marshy depression, strictly aligned as it is with the undoubted Car Dyke to the north and south, is the surviving trace of a section which was filled up by the builders of the earthwork, possibly because the Dyke had so far degenerated that it had ceased to be much of an obstacle.

There seems to have been nothing to prevent them from setting their work further to the west if need be, and it is perhaps significant that to fill their moat they tapped the Billingborough Lode rather than make use of the derelict canal. This being the case, why should a new line have been cut for the Car Dyke, at some later date, to take it round the east side of the work?

The age of the earthwork is not definitely known, but it has a number of associated enclosures to the west and north sketched in on the plan, which make it highly probable that it was some sort of moated farmhouse or grange, possibly belonging to the famous abbey of Sempringham, which was situated little more than a mile to the west. It is conceivable that the medieval exploiters of this region found it desirable to re-open the Car Dyke as a means of communication and drain for local purposes. The Billingborough Lode has been considerably increased in depth in living memory, and may then have become lost in the marshes only a short way to the east of this site. Flooding from the Lode, added to difficulties arising from the insecure foundation of the east end of their enclosure, may have been the inducements which led to the re-cutting of the Dyke on an amended line.

Most of this is mere speculation, but here is an excellent chance to clear up the age of the Car Dyke by a few comparatively slight excavations. The date of the enclosure should not be difficult to determine, and if it is discovered that the original Car Dyke does underlie it, a positive period will be established at which the Car Dyke was already in ruin, even if no more direct evidence of its age is forthcoming.

The Cambridgeshire Car Dyke has been conclusively proved Roman,² and a chance comes to clear up the date of a work 50 miles long at the cost of a few trenches.

Who will undertake it?

² Dr Cyril Fox, *The Archaeology of the Cambridge Region*, pp. 179-80.

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A NOTE FROM ITALY

The latest number of the *Bullettino di Paletnologia Italiana*, 1929, XXIX, contains several articles of unusual interest.

H. M. R. Leopold writes on the original home of the Terramaricoli. Criticizing Pigorini's comparison of the pottery from the Terremare with that found at Toszeg in Hungary, he shows that the resemblances are by no means close. On the other hand the finer class of Italian ware, which is decorated, shows a great deal of similarity in its pattern to the pottery of the Lausitz culture in central and southern Germany. The best explanation of this is said to be that the makers of the finer pottery were travelling craftsmen who came over the Alps and wandered from place to place.* Consequently no argument as to the geographical or racial origin of the Terramaricoli can be drawn from the pottery.

In this connexion we may draw attention to a remark made by Antonielli in the course of a review at the end of the volume. It is doubly significant as coming from Pigorini's most devoted follower. The Terramaricoli, says Antonielli, must be of the same stock as the lake-dwellers north of the Alps; their culture is an essentially Italian species of the genus lake-dwelling. Prof. Childe has elsewhere pointed out the tenuity of the Hungarian chain; so that it seems as if we should look rather to Switzerland and Savoy for the nearest relatives of the Terramaricoli.

Taramelli's address to the International Congress of Archaeology held at Barcelona in 1929 is reprinted in the *Bullettino*. It deals with the question of connexions between Sardinia and Spain, as well as with the particular description of a sanctuary of nurag style. In the eneolithic period he remarks on the general similarity of the bronze weapons and implements, and still more of the pottery found at Anghelu Ruju, to that of the contemporary Spanish sites. He rejects the explanation that each country is indebted to importations from Crete or the Aegean. He rejects also the suggestion that Spanish colonies were planted in Sardinia. Independent development aided by commerce carried on in Sardinian ships is rather the clue to the eneolithic period in the island. In the nurag period again the tomb-architecture shows its native evolution in all the stages back to the earliest Dolmens, but the nurag itself is a form originally adopted from the East, which blossomed into a particular species in Sardinia because it is so exactly

*On purely *a priori* grounds this explanation strikes us as most improbable.—Ed.

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adapted to the climatic requirements. The mineral wealth of the island in copper, lead and silver was the basis of its prosperity during the flourishing time of the warrior people of the nurags.

The earliest Sardinian temples were grottoes, but the special native cult was always that of the water-spring. From the little fountain protected by a miniature cupola, the type develops to a more complicated form. On the plateau of Serri is seen the latest evolution. Within a huge temenos protected by betylic stelae at the entrance are two temples, one of which stands over the spring. It is roofed with a cupola; it has an atrium, vases for lustration, altars, tables of offering, betyloi. The bull's head is apparently the image of the deity. A second temple, reached by a narrow passage from the first, is rectangular and hypaethral; here the sacred emblem is the dove. Near the temenos is an enclosure with seats for the worship of the axe, for the double-axe occurs here as well as in Crete. Outside the temples is the house of the chief, a nurag of fine and elaborate construction.

THE LONDON MUSEUM

The Trustees of the London Museum have made a new departure in museum-work by instituting a Studentship for the encouragement of research in some subject germane to the interests of the Museum. They have been enabled to take this step through the generosity of Viscount Esher, who has placed at the disposal of the Trustees the sum of £300 per annum as a memorial to his father, the late Lord Esher, one of the founders of the Museum. The Studentship will be awarded 'for the purpose of promoting research into some aspect of the history or archaeology of London whether by documentary research, by excavation, by museum-work or by a combination of these methods'. The award will be made by the Trustees on the recommendation of an Advisory Committee, on which representatives of the Society of Antiquaries, the British Academy and the Universities of Oxford, Cambridge and London will serve, and the tenure will be normally for a period of two years. The researches of the Student will be incorporated in a thesis which may, in due course, be published at the direction of the Trustees. It is hoped that, in the course of years, this will result in a very substantial body of useful and original material bearing directly or indirectly upon the arts, crafts and history of the Metropolis; and the scheme may be regarded as an interesting experiment in the development of that extra-mural work which is now regarded as appropriate to our National Museums.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

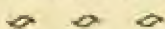
The Research Committee of the Congress of Archaeological Societies has issued an important report on the need for co-ordination in excavation. We had hoped to print the report but extraordinary pressure on our space has prevented this.



The Anglo-Saxon (6th century) 'Winchester bowl'—the discovery of which is recorded in *ANTIQUITY* for December, p. 494—has been placed on permanent loan in the British Museum by the Hampshire County Council. A replica will be presented to the Winchester Museum.



A new opportunity has arisen for those claiming the art of the 'diviner'. By means of this 'gift' a young woman is reported to have been the means of finding at Leprignano, on the site of the old town of Capena, two Etruscan tombs containing silver, bronze and earthenware objects. (*The Times*, 16 January).



The important collection of implements, Roman jewellery, and other objects found on Lambay Island, off the north coast of co. Dublin, in 1926-27 has been presented by Lord Revelstoke to the National Museum of Ireland. (*Irish Times*, 7 January).



Excavations on the Romano-British site at Walls Field, Baldock, Hertfordshire, were continued last year under the direction of Mr W. Percival Westell, Curator of the Letchworth Garden City Museum. A full report, with notes on the cemetery found at Hawthorn Hill, is printed in *The Times*, 3 December, p. 19.



First reports from Mr C. L. Woolley on the ninth season's work at Ur by the joint expedition of the British Museum and the Museum

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of the University of Pennsylvania were published in *The Times*, 30 December (p. 10) and 6 January (p. 11), and forecast the possibility of discoveries of equal interest to those of previous seasons. The site of the tombs of the kings of the Third Dynasty—among whom were Ur-Engur, who built the Ziggurat about 2400 B.C., his son Dungi, and his grandson Bur-Sin may yield information of the greatest importance. Illustrations of the tombs were given in *The Illustrated London News* of 3 January.



Excavations have been carried out near Akhiar (Sevastopol) in the Crimea and a well preserved basilica of the fifth century is reported on the site of the ancient Gothic town of Eski-Kermen. (*The Times*, 10 October).



The discovery of a hitherto unknown Roman camp at Wall, near Lichfield is reported. (*Walsall Observer*, 25 October).



Roman pottery-works have been found near Newtown, in the Isle of Wight. (*Portsmouth Evening News*, 27 October).



Interest has been aroused by the Persian Government having granted Professor J. H. Breasted, of Chicago, permission to conduct excavations at Persepolis, the ancient capital of Persia. (*Morning Post*, 11 December). We have on more than one occasion pointed out the possibilities awaiting scientific excavation in Persia and Professor Breasted will make good use of his opportunity.



We are reminded of the article on 'Submarine discoveries in the Mediterranean' by Monsieur A. Merlin in our last number by the report in the *Morning Post*, 15 December, that fishermen working off Salerno have brought up a large bronze head of Jove. A quantity of 'classic statuary' has also been dredged from the inner harbour at Piræus. (*The Times*, 13 December).



A fine hoard of silver ware and jewellery found at Pompeii in a house in the Via dell' Iside is announced by Professor Majuri, Superintendent of Excavations in South Italy. (*Morning Post*, 8 December; *The Times*, 21 January). Some of the principal pieces were shown in the *Illustrated London News* of 10 January, and *The Times*, 7 January, p. 16.

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An illustrated account by Dr R. E. Mortimer Wheeler of the season's work at Verulamium is printed in *Discovery* for December, pp. 393-6.

The excavations at Colchester last year show that there was an active British occupation there for a hundred years, 50 B.C. to A.D. 50. The pottery found is of great importance as evidence of the import of Arretine ware of Italy and the early red and black pottery of Roman Gaul and the Rhine into Britain before the Roman conquest. Glazed cups, bowls, and platters were found in every hut. There does not appear to have been definite planning of streets. Refuse pits were numerous and there were ample drainage trenches. A timber-lined well, perhaps the earliest of its type in the country, was found. There appears to have been very little change in the ordinary life of the settlement under Roman rule. (*The Times*, 23 October).

A series of flints of unusual type has been obtained from the Swanscombe gravel pits near Northfleet, Kent. (*The Times*, 6 November).

Chesters Museum, well known to visitors to Hadrian's Wall, has been given in trust to the county of Northumberland by Mr John M. Clayton. The first trustees, including Sir George Macdonald, Mr R. Holland-Martin, Mr R. G. Collingwood, Mr Parker Brewis, and Mr R. C. Bosanquet, are sufficient guarantee that the care of the collection, one of great interest, is ensured. A note on the formation of the Museum was contributed to *The Times*, 31 December, p. 12.

A second expedition has been formed to continue the exploration of ancient Jericho begun last year with the co-operation of Sir Charles Marston and the late Lord Melchett. Professor John Garstang is Director. It is proposed to complete the investigations of the defences of the city and to work on an unexcavated area which it is expected will reveal remains of the late Bronze Age. (*The Times*, 1 January). An illustrated article on Jerusalem, with plans, by Professor Garstang, is published in the *Illustrated London News* for 17 January.

It is reported in *The Times* of 20 December (p. 11) that M. Ch. Virolleaud, formerly Director of the Archaeological Service at Beirut, has by means of further inscriptions discovered at Ras Shamra been able to decipher the cuneiform tablets found there in 1929. Attention was

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first called to them by M. Virolleaud in *ANTIQUITY*, 1929, III, 350, and they are also referred to in the article by M. F. A. Schaeffer in our last number (p. 464).



The new Ancient Monuments Bill was introduced into the House of Lords on 3 December. It provides that for the purpose of preserving the amenities of any ancient monument the Commissioners of Works may prepare and confirm a preservation scheme for any area comprising or adjacent to the site of the monument. The general provisions of the Bill are set out in *The Times* of 11 December.



The Second International Congress of the History of Science and Technology will be held in London 29 June to 3 July 1931. Those interested should communicate with the hon. secretary of the Congress, Mr H. W. Dickinson, The Science Museum, South Kensington, S.W. 7.



A French expedition is reported to be exploring the Sahara with 'camions' and an aeroplane. Between its departure, announced for November last, and the Colonial Exhibition at Paris, announced for this summer, it is proposed, according to M. Louis Marin (1) to prove that crossing the Sahara is a practical proposition, (2) make trigonometric and geodetic surveys by aeroplane (?), (3) carry out excavations and open tombs, (4) make casts of rock-sculpture, (5) collect ethnographic material, observe magnetic phenomena, etc.—in fact generally to run amok in a scientific sense. (G. de Lafrete in *L'Echo de Paris*, 8 November).



A labourer digging a pipe-trench in a meadow at Stert, on Holes Bay, Poole Harbour (Dorset), has come upon a black Romano-British pot of native ware, containing about 1000 coins (3rd brass), Valerianus to Claudius Gothicus, about A.D. 254-268.



We are indebted to a reader in East London, Natal, for drawing attention to the alleged discoveries of the Italian expedition in South Africa. So much nonsense, however, has been written on this subject in the press that we prefer to wait until some authoritative announcement has been made by the leader of the expedition.

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Director Bersu of the Römisch-Germanischen Kommission gives an all too brief preliminary notice of the excavations on the Goldberg—a 'promontory fort' in Würtemberg. No less than five distinct occupations were detected, and complete plans of the several villages, together with many important architectural details, have been obtained. The history of the site began in neolithic times with a Danubian (Rössen) settlement followed by a fortified village of Michelsberg folk (probably related to the Windmill Hill people of Britain) and goes down to middle La Tène times. (*Deutschum und Ausland*, nos. 23-24, communicated by Prof. V. Gordon Childe).



An account of the ninth season's work at Richborough under the supervision of Mr J. P. Bushe-Fox and Mr W. G. Klein, acting for the Society of Antiquaries, is published in *The Times*, 12 November, p.16.



Proposals for an extensive excavation of the site of Samaria, Palestine, are announced. It will be under the auspices of Harvard University, the Palestine Exploration Fund, the British School of Archaeology in Jerusalem, the Hebrew University of Jerusalem, and the British Academy. The Director is Mr J. W. Crowfoot and it is hoped to begin work this March and continue until the middle of the summer. (*The Times*, 22 November, p. 14).



Casts of the skull and lower molar found at Chou Kou Tien, near Peking, have been presented to the British Museum (Natural History). (*The Times*, 24 November, p. 9).



Through the generosity of an anonymous Syrian lady a Chair of Archaeology has been founded at the American University of Beirut. The first holder is Dr Ingholt, the Danish archaeologist. (*The Times*, 27 November, p. 20).



The excavation of a fortified hill-settlement has been undertaken by Mr V. E. Nash-Williams, F.S.A., at Llanmelin, near Caerwent. The evidence does not allow precise dating but the pottery is assigned to La Tène period, and the settlement is not later than 200 B.C. A brief outline of the work accomplished is printed in *The Times*, 1 December, p. 16.

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. Books are occasionally included.

Decorative Patterns of the Ancient World, by Flinders Petrie, KT., F.R.S., F.B.A. London: University College, Gower St., and Bernard Quaritch, 1930. 88 plates.

We wish to draw attention to this valuable collection of designs which, by its character, is hardly susceptible of review. It will be found most useful for reference. We can only thank the author for the gift. For thirty years he has been looking forward to the publication of some such manual.

Die Gliederung der Glockenbecher Kultur in Mitteledeutschland, by Gotthard Neumann. *Præhistorische Zeitschrift* (Berlin: Leuschner) 1929, XX, 3-69.

This is a valuable paper. It gives a list of all the finds and a distribution-map indicating the area occupied by the culture. It is followed by a similar paper on the Aunjetitz culture, by the same writer.

Premières impressions de voyage sur la préhistoire sud-africaine, by the Abbé Breuil. *L'Anthropologie*, 1930, XL, 209-23.

Outillage préhistorique d'un nouveau sondage profond dans L'Acropole de Suse, by R. de Mecquenem. *Ib.id.* 225-32.

An important note on a subject which we hope to deal with in a future number of ANTIQUITY.

La Cronologia della ceramica dipinta dell' Europa orientale, [Chronology of painted ware in Eastern Europe], by Vladimir Dumitrescu. *Ephemeris Dacoromana*, 1930, IV, 257-308.

Chronological tables on pp. 301 and 307. The author places Butmir at 2800 B.C.

Craftsmen's measures in prehistoric times, by Ludovic MacLellan Mann. Glasgow, 1930. Price not stated. Paper covers, 24 pages and illustrations.

Claims, *inter alia*, that 'in the earliest age of human workmanship yet traced, man was already using a foot-rule and a scale of measures'. The writer admits that his theme is 'at the first glance unfamiliar, perhaps even incredible' and we entirely agree.

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Wales and Archaeology, by R. E. M. Wheeler. The Sir John Rhys Memorial Lecture, British Academy (*Proceedings*, vol. xv). Milford, 1930. 24 pp. 1s 6d.

A short account of the principal Welsh topographers and archaeologists.

Neolithic pottery and other remains from Pangbourne, Berks, and Caversham, Oxon., by Stuart Piggott. *Proc. Preh. Soc. East Anglia*, 1928-9, vi, 30-39

A short account of two hitherto unpublished finds of neolithic pottery, well and fully illustrated, with general notes on the types represented. The Pangbourne find was a burial—a skeleton with associated grave-goods. This type of burial is rare in England, where multiple, generally mutilated, burial in long barrows is the rule, but Howe Hill, Duggleby (Yorks, E.R.) is cited by way of comparison.

Discoidal polished flint knives—their typology and distribution, by J. G. D. Clark. *Proc. Preh. Soc. East Anglia*, 1928-9, vi, 41-54.

This is an important paper. From a study of the typology and distribution the writer concludes that the type is of native origin and that it had a short life. Its distribution coincides very closely with that of beakers, and associated finds tend to confirm the obvious conclusion. The distribution further suggests that the main body of the Beaker-folk landed and settled in East Anglia, on the shores of the Fenland, and that they spread thence over the rest of England. We look forward to more articles like this from Mr Clark.

The Arab dynasty of Dar For (Darfur), A.D. 1448-1874, by Arthur E. Robinson. *Journ. African Society*, 1928, xxvii, 353-63; 1929, xxviii, 55-67, 274-80, 379-84; 1930, xxix, 53-70, 164-80.

Contains more than the title would suggest, including a chronological table of the Eastern Sudan, B.C. 31-A.D. 1504 (xxviii, 55-64) and valuable pedigrees.

Australian Aboriginal Art; issued in connexion with the Exhibition of A.A.A., National Museum, Melbourne. Printed and Published for the Trustees of the Public Library, Museums and National Gallery of Victoria, by H. J. Green, Govt. Printer, Melbourne, Australia July 1929. pp. 39, 27 illus. (2 coloured). 1s.

A handy little guide-book.

Iconographie des Bacchantes d'Euripide, by Hubert Philippart. *Revue belge de philologie et d'histoire*, 1930, ix, 1-72.

A well illustrated and scholarly paper, fully documented.

The Early Castles of Mar (1st paper), by W. Douglas Simpson. *Proc. Soc. Ant. Scot.* 1928-9, LXIII, 102-38.

We reserve fuller notice until the series is complete.

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Sanctuaire punique découvert à Carthage, by Louis Carton. Geuthner, Paris, 1930. pp. 55, 6 plates.

The excavations of the Temple of Nabû at Nineveh, by R. Campbell Thompson and R. W. Hutchinson. *Archaeologia*, 1929, LXXIX, 103-48, 3 plates. (Sold separately by John Johnson, Oxford, 12s. 6d).

Sull' origine e l'evoluzione delle scuri di rame Carpato-danubiane [Origin and evolution of Carpatho-danubian copper axes], by Ecaterina Dunareanu-Vulpe. *Ephemeris Dacoromana*, [Annual of the Roumanian School at Rome], 1930, IV, 181-211.

Station chelléenne et acheuléenne de surface à Kalaab Yalmour, Alaouites (Syrie), par A. Burkhalter (Lattaquié) et le Dr Marcel Baudouin. *Bull. Soc. préh. franc.* 1930, XXVII, 391-4.

Camps, enceintes, mottes et fortifications antiques du département de l'Eure, by Dr R. Doranlo. *Bull. Soc. Antiq. de Normandie*, 1920 (1921). pp. 134, 7 plates.

Un station du cuivre à Auzay, près Fontenay-le-Comte (Vendée) by G. Guérin. *Bull. Soc. préh. franc.* XXVII, 68-70.

This is evidently an important site, and one that should be fully and carefully excavated, if only to place the study of prehistoric pottery in France upon a sure foundation. Its present chaotic state is a serious obstacle to progress.

Fouilles paléolithiques en Palestine, 1928-9, by Miss D. A. E. Garrod. *Bull. Soc. préh. franc.* XXVII, 151-60.

Essai sur la chronologie préhistorique de l'Afrique occidentale française, by R. Furon and P. Laforgue. *Bull. Soc. préh. franc.* XXVII, 171-4.

La préhistoire en Palestine d'après les travaux récents du Dr L. Picard. *Bull. Soc. préh. franc.* XXVII, 248-55.

The results, based largely on the typology of flint implements, of recent French investigations in the region between Mount Carmel and the Lake of Tiberias. Bibliography.

Bread-making in old Pompeii, by Tatiana Warscher. *Art and Archaeology*, October 1930, XXX, 103-12.

A useful and fully illustrated 'encyclopaedia' article.

Sinhalese Temples, by A. M. Hocart. *Art and Archaeology*, October 1930, XXX, 113-20.

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Le paléolithique de l'Afrique mineure, by Hugo Obermaier. *Revue Archéologique*, May-June 1930, XXXI, 253-73.

Professor Obermaier, author of *Fossil Man in Spain*—a standard text-work covering far more ground than the title suggests—is of course an authority of the highest standing, and his article on North Africa is a welcome addition.

La nécropole du Castelet, by F. Benoit. *Mém. de l'Institut des fouilles de Provence* (Paris, Berger-Levrault, 1930) pp.33. [Short notice in *Rev. Arch.* XXXI, 370].

Arthur and Athelstan, by W. G. Collingwood. *Saga Book of the Viking Society*, 1928, x, [separate pagination].

Imitations of early *sigillata* shapes by late Romano-British potters, by Thomas May. *Trans. Birmingham Arch. Soc.* 1927 (1930), LII, 240-44, 6 plates.

Proceedings of the Spelaeological Society of Bristol University, 1928, vol. III, no. 3. 7s 6d.

This number is mainly occupied by the various reports of the society's work in Ireland, where remains of palaeolithic man were found in a cave. There is a valuable note on palaeoliths from gravel terraces of the Bristol Avon, by Messrs J. A. Davies and T. R. Fry.

The Economic and social history of an English village (Crawley, Hampshire) 909-1928, by Norman S. B. Gras and Ethel C. Gras. Harvard Univ. Press, Cambridge, U.S.A., 1930. [Harvard Economic Studies, 34]. Milford, 34s.

We are not greatly impressed with this book. So far as we have been able to test it, it falls short, both in knowledge and accuracy. For instance, Professor Gras is apparently ignorant of Dr Grundy's work, since he does not refer to it in dealing with the Crawley charter (pp. 177-82). It was dealt with by Dr Grundy in *Arch. Journ.*, LXXXI, 1924 (issued 1929), 42-6. The description of Celtic fields is very unsatisfactory, and it is quite incorrect to say that air-photography was not 'applied to English agrarian history' until after it had been 'used on the deserts of Egypt to disclose the location of buried tombs'. Combe-furlong is not evidence of a Celtic settlement, since o-r *cumb* was a loan word. There are 163 pages of text and 536 of 'Documents and Statistics'.

Further notes on the Archaeology of Sheppard island, by C. van Riet Lowe. *South African Journal of Science*, XXVI, Dec. 1929, pp. 665-83.

Describes the discovery of a Stone Age site on Sheppard island in the Vaal river, where Smithfield, Fauresmith (together with Middle Stone Age types), and late Stellenbosch industries occur in stratigraphical sequence. On typological grounds

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it has long been thought that the Stellenbosch type of industry was older than that of the Fauresmith. Here is stratigraphical proof. Further, Lowe determines here a definite series of climatic changes which will presumably be found to have a wider application in South Africa. Briefly he suggests that late Stellenbosch man, together with the extinct South African mammoth,* lived during a period of heavy but declining rainfall. Fauresmith man, together with *Bubalus Bainii* and *Equus Capensis*, lived under drier and perhaps warmer conditions. Later almost arid conditions set in and mankind seem to have deserted the site. Finally damp conditions returned and Smithfield man occupied the spot. M.C.B.

Fresh light on the Prehistoric Archaeology of South Africa, by C. van Riet Lowe. *Bantu Studies*, III, no. 4, Dec. 1929.

Gives an account of a 'prehistoric' expedition led by the author during the visit of the British Association to the country. The Abbé Breuil was among the party. Among some of the results obtained one may note that a definite beginning was made in subdividing the Stellenbosch industries into a lower, middle and upper series. Also a sequence was obtained in the case of some of the Bushman paintings on the western side of the Drakensberg mountains. These tentative beginnings will doubtless blossom later, the suggestions made being used as the starting point for further investigations. M.C.B.

Notes on some stone implements from Tuinplaats, Springbok Flats, by C. van Riet Lowe. *South African Journal of Science*, xxvi, Dec. 1929, pp. 623-630.

Gives a brief account of some surface finds of the middle Stone Age near the place where Springbok Man, *Bubalus Bainii* and *Equus Capensis* were discovered. Though there is no stratigraphy, and proofs of any real association are absent, there is, on the other hand, no reason absolutely to deny the possibility of such an association. It can only be hoped that further finds will help to clear up and settle this important point. M.C.B.

Certain Stone implements of the scraper family found along the coast of New South Wales, by C. C. Towle, B.A. (privately printed, 1930).

Mr Towle is not happy at the classification of certain stone tools found in Australia as 'chipped back knives'. He does not consider that the working edge is the one formed by the intersection of a primary flake with the main flake, but suggests that the blunted back is the result of continual re-sharpening of a scraper which becomes steeper at each operation. Analogy with somewhat similar types occurring in other parts of the world—though of course not necessarily belonging to the same culture as those found in Australia—would hardly seem to back up Mr Towle's contention. However it is always well to docket such suggestions as further evidence may turn up which will help to elucidate the question. M.C.B.

* Naturally it would be extremely unwise in any way to correlate this South African species of mammoth with the beast of the same name found in Europe.

Reviews

WHO WERE THE GREEKS? By JOHN LINTON MYRES. *Berkeley, California: Univ. of California Press. London: Cambridge University Press, 1930. pp. xxxvii, 634. 31s 6d.*

Of the numerous attempts to synthesize the prehistory of Greece which have appeared within recent years, this is the first to take account of all the kinds of evidence, including one, the historical content of folk-memory, hitherto scarcely exploited at all. Out of the mass of complicated and seemingly conflicting material Prof. Myres has created order and coherence and gone a very long way towards answering the question which forms the title of the book. At times the temptation to strain one class of evidence to suit another has not been resisted; at times the archaeological evidence has been made more confusing than it really is; at times the obscurity of the subject is reflected in the thought, so that in the case of certain problems to which we should have liked an answer we are left wondering what the author's answer really is. No doubt the elusiveness is deliberate and the thought, as befits the theme, is, like the Greek nation, 'ever in process of becoming'. Not the least of the merits of this book is the beautiful prose. We doubt if since Newman, a learned subject has been handled in English so expressive, so terse and so melodious. Some passages such as the retrospect and conclusion (pp. 529-530) and indeed the whole Epilogue will surely pass into anthologies as models of lucid and vigorous style.

After treating in the first six chapters the various kinds of evidence in succession, Prof. Myres passes in the seventh to what is the most absorbing part of the book, *i.e.* the events that preceded and succeeded the Dorian invasion, and the Dorian invasion itself. The last chapter is a masterly appreciation of these other than material factors, which illustrated in their art, literature and music, exemplify the effort of the Greek nation, now conscious of unity, to adapt itself to the problem of how to live well.

In discussing the 'Coming of the Dorians', Prof. Myres has, we think, scarcely done justice to the archaeological evidence. It is becoming increasingly clear that the cultural background of all that happened in North Greece is to be found in the Third Thessalian period (or rather that part of it which is represented by the $\Gamma 3$ wares, since the $\Gamma 1$ wares should be relegated to the Second Period). This culture is partly an extension southward of the Early Macedonian Bronze Age and partly an extension northwards of the 'smear ware' or Early Helladic culture of the South, the two streams meeting somewhere in Thessaly. But whereas in southern Greece, Early Helladic is transformed into Middle and Middle into Late Helladic, in Thessaly (as in Macedonia) the Early Bronze Age culture was never transformed but merely penetrated by influences: 'grey-ware', Mycenaean or other. And just as in Macedonia, in spite of the interval of time that separates them, the Iron Age pottery is largely a survival of that of the Early Bronze Age, so the Marmáriani and Theotókou pottery shows that much the same was the case in Thessaly too. Now this Early Bronze Age culture spread right across Greece, the northern or Thessalo-Macedonian variety reaching Epirus (as recent excavations

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show), the central or southern variety reaching Lefkás and Ithaka, where there is reason for supposing it maintained itself almost unchanged till Late Mycenaean times. The fabrics of Thermon and Lianokladai are local specialized developments in which 'grey-ware' and painted ware influences are apparent but the basic element is unmistakably Early Bronze Age in character. Any explanation of movements of people in north and northwest Greece must therefore take into account the unity and persistence of this wide-spread and deeply-rooted culture. For, other evidence apart, the archaeological evidence shows that the coming of the divine-born dynasties and that of the Dorians must have been movements of people who were ultimately akin to those they came among, but who, owing to geographical reasons, had been less affected by influences operative at the centre, and it follows that if the spread of grey-wares is to be associated with the spread of Indo-germanic speech (as many hold), then the degree of Indo-germanization of these outlying regions must eventually be estimated from the proportion of grey-wares found in their excavated sites. But by proposing as the bearers of Indo-germanic speech the 'smear-ware' people, or rather a hypothetical folk, without pot-fabrics, within the 'smear-ware' area (p. 287), Prof. Myres has, we venture to think, failed to grasp the unitary character of the Early Helladic-Early Macedonian culture. The adoption within an area large enough to possess widely different kinds of climate of this or that kind of house is not so significant as the prolonged use of domestic pots that preserve identity of shape and of minute details.

The view that spectacle-fibulae formed part of the original Dorian equipment (p. 245) receives support from the inventory of the Marmáriani tombs. These tombs, which, on other grounds, are considered to be those of the Lausitz invaders of Macedonia, contain, among other remarkable ornaments, iron spectacle-fibulae with cone-shaped bosses (positive proof of their Northern origin) made of bronze and plated with gold. If, as is quite possible, the Lausitz people pushed straight on into Thessaly, the Dorians (though south of Thessaly) may have had time to borrow the idea of the spectacle-fibulae before they started on their Peloponnesian adventure about 1130 B.C. Incidentally, the fact that the spectacle-fibulae in the Marmáriani tombs are made of iron, as well as the rings and swords, suggests the motive that drew the Lausitz people southwards.

After reading what Prof. Myres has to say on the origin of the concentric circle, we are still uncertain as to his meaning, since he seems to contradict on one page (p. 453) what he says on another (p. 454). Perhaps, after all, there is no unitary explanation of its origin, but all three factors must be taken into account; one, the tradition of concentric circles, either stamped or painted, which beginning in the Early Bronze Age never died out. Good intermediate examples are the matt-painted jar from the Amyklaion with concentric circles in triple outline between horizontal zones, and an incised concentric circle in six-fold outline from a Late Bronze Age stratum in Chalcidice (shortly to be published). Secondly, the traditional preference of the Lausitz invaders for half-concentric circles in fluted technique; thirdly, the influence of Late Mycenaean spirals which when carelessly drawn and disconnected are almost indistinguishable from concentric circles.

The considerable quantity of Mycenaean pottery found in Macedonia is *not* (as Prof. Myres says, p. 453) imported. It is almost exclusively made of local clay.

On page 245 Prof. Myres speaks of the contamination of the painted ware cultures by local cultures 'older established'. If by these he means the Early Bronze Age Cultures, the statement is disproved by recent discoveries which show that these are everywhere later than and imposed upon the painted wares.

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That the spiral entered the repertoire of Cycladic potters *via* Thessaly is likely (p. 239), especially since there is now reason for supposing that it entered Thessaly in an incised form and was subsequently translated into paint on arrival there. This derivation would also equate with the appearance of painted spirals, obviously of Cycladic origin, on EM III pottery of Crete. The only difficulty is that the incised spiral-band pottery of Macedonia which corresponds most closely to the Cycladic, even to the wedge-shaped excisions with which the spirals are associated, is demonstrably much later.

Refugees from Cucuteni II (datable by Minyan sherds to about 1800 B.C.), cannot have become the 'spiral-using intruders into Thessaly' about 2500 B.C. (p. 241).

We are puzzled by the statement on p. 259 (repeated elsewhere) that prehistoric funerary tumuli are common in Macedonia. The only ones known are of Hellenistic date.

It would be possible to find other points to criticize, did space allow, but, when all is said, one can feel nothing but admiration and gratitude for this penetrating and inspiring book.

W. A. HEURTLEY.

THE DANUBE IN PREHISTORY. By V. GORDON CHILDE. Oxford: the Clarendon Press, 1929. pp. XII, 447, with 100 plates and 11 maps. 42s.

Quite as notable as Prof. Myres' *Who were the Greeks?* (reviewed above), though in a different way, is Prof. Childe's *The Danube in Prehistory*. As being largely a record of things found, it is, naturally enough, not easy reading. A presentation of facts lends itself less easily to fluent prose than the expression of ideas. The repetition of *clichés* becomes almost inevitable, but we wish Prof. Childe could have avoided phrases like 'the precious metal', 'the good father', etc., with which the text is too liberally sprinkled. The illustrations, though generous, are not really adequate, and to complete the usefulness of the book, an album of plates on the lines of Montelius' *Civilisation Primitive en Italie* should be added.

This much having been said by way of criticism, there remains little to do but record admiration for what is nothing less than a monumental piece of learning. To gain some idea of the complexity of the subject, one need only glance at the Table of Interrelations. When it is realized that almost everyone of the cultures there appearing is faithfully described in detail, that the position of each group within the whole as well as in its relation to outside groups is fully discussed, one's admiration is increased still more. Above all, one must respect the disarming modesty with which the author expresses his own opinions as well as the courteous deference with which he treats the opinions of others.

The major problems of Danubian prehistory which are in dispute are the date of Vinča I (there is a gap of nearly 1000 years between Prof. Childe's reckoning and that of the excavator, Prof. Vassič), the relation of the Danubian painted wares to the painted-ware cultures of the 'Black-Earth' region and of both to the Aegæan, the origin of Corded ware, the interrelations of the Lausitz and allied cultures, and finally the chronology of the Hungarian urnfields. Of all these Prof. Childe states the *pros* and *cons* with lucidity and fairness, sometimes adding his own view, sometimes preserving an open mind.

Towards the solution of the second and third of these problems more recent discoveries in Macedonia have contributed something. This year's excavation at Sérvia in the Haliakmon valley, for example, shows that Crusted ware, incised spirals, black-polished pottery (Thessalian T1 and its varieties) as well as a simple painted pottery all

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converged upon and presumably entered Thessaly together. Their simultaneous appearance coincides on the site with the destruction by fire of a settlement of Thessalian A type, and is followed, with what must have been a very short interval of time, by the arrival of Early Bronze Age intruders from Macedonia. Inferences to be drawn from all this are that the source of the movement lay beyond the Danube, where crusted ware, incised spirals and a very similar painted ware are at home; that the black-polished ware was developed *en route*, since it is identical with similar pottery now known from numerous Macedonian sites; that the second Thessalian Period (including Γ_1 wares) is the result of this movement, the Dimini spirals being the incised spirals translated into paint; finally that the second period in Thessaly must have begun somewhere about 2500 B.C. All this has bearing too on the origin of the painted-ware cultures of the 'Black-Earth' region, which may, on the analogy of Sérvia, turn out to be (as many think) the result of a similar movement from the Middle Danube, but in an eastward direction. The objection that no bored axes occur on those sites is true of Sérvia also.

Prof. Childe's view that Corded ware originated in South Russia receives support also from Macedonia, where stone axes and curious fluted bone-beads, both of south Russian type, have been found in Chalcidice associated in a context which is securely datable to about 2300 B.C. Since all the other affinities of the stratum are with Troy II, the source of these objects is South Russia rather than Central Europe. Isolated sherds of Corded ware have also been found in Chalcidice in corresponding strata.

We are at a complete loss to understand what Prof. Childe means when he says on p. 97 that during Danubian Periods III, IV and possibly still in V, Thessaly, Macedonia and the south Danubian region form one continuous province where culture developed on strictly parallel lines. Actually both Thessaly and Macedonia were more or less static but such influences as they did receive were not Northern. W. A. HEURTLEY.

BRONZEZEITLICHE UND FRÜHEISENZEITLICHE CHRONOLOGIE. By NILS ÅBERG. Teil I. Italien. Stockholm: Im Verlag der Akademie. pp. 216, and 598 figs. 25 kr.

This is a handsome book, finely printed and illustrated with figures taken principally from Montelius but supplemented also from other sources. It is the first of three volumes, the second of which will deal with Hallstatt. It is to be hoped that in the next volume the publisher will not omit such indispensable adjuncts as an index and a list of illustrations. A little extra sub-editing devoted to headings, divisions and titles of chapters would greatly assist the student.

Prof. Åberg, whose work in various fields of European archaeology is well-known, is a devoted follower of Montelius and pursues the methods of his great countryman with striking success. Typology is his principal instrument and he wields it with extraordinary dexterity. This book is the natural corollary to Montelius' own work on Italy, but it is written with complete independence of view, and with a full knowledge of all the research that has been done in the most recent years.

A brief preface summarizing Montelius' own work was almost superfluous though it is a graceful homage of loyalty. The first chapter after this discusses the starting-points for any absolute chronology, viz. the Mycenaean and Greek contacts. Then begins the application of method, with a chapter of 16 pages which outlines, on typological system, the movement from north to south of the Bronze Age culture in Italy. This is already so familiar to students that it need not be discussed in a review.

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The history of the Terremare and their successors at Timmari, Pianello, etc., is now matter of universal knowledge; and apart from some minor matters of detail the views here given have already met with general acceptance. Nevertheless it is useful to have them so clearly re-stated with such well-chosen and apposite illustrations. The really new and important contribution which this author makes is his strikingly original and unexpected treatment of the Iron Age, especially in its earliest phases. Before studying this the reader will do well to turn to p. 142, in order to familiarize himself with the division into periods, which is quite different both in content and in absolute chronology from the scheme suggested by Montelius. A chart at the end of the book gives these divisions in tabular form. For Central Italy they are as follows:—

First period, from 1000 to 850 B.C.

Second period, 1st section 850 to 750 B.C.; 2nd section 750 to 700 B.C.

Third period, from 750 to 650 B.C.

Fourth period, from 650 to 600 B.C.

The treatment of Central Italy is far the strongest part of the book and is a very valuable addition to our knowledge. The author's general theory, which he supports by ample argument and illustration, is as follows. Just as the Bronze Age was a time during which the fertilizing current of civilization flowed from north to south, so the Iron Age was a time in which this process was exactly reversed, the earliest and most fruitful developments beginning in the south. Central Italy entered at once into the new heritage but the north was late and slow to participate.

Central Italian culture is examined as it presents itself in three areas, viz. Southern Etruria, Rome and Terni. In each of these the earliest Iron Age naturally exhibits various forms which are immediately evolved from the preceding local Bronze Age; Rome indeed has little else. But at Terni and in Etruria, besides the indigenous products, certain new forms begin to appear in the first period, between 1000 and 850 B.C. Notably there are peculiar short swords with T-shaped hilts, and magnificent fibulae of which the disks are engraved with patterns previously unknown. Central Italy then at the opening of the Iron Age exhibits a remarkable mixture of native and foreign elements. It is Aberg's particular merit to have pointed this out and to have identified the source of the foreign infiltration.

The clue was furnished by Orsi's comparatively recent excavations at a site near Monteleone in Calabria. Orsi dated this cemetery of Torre Galli on very well-reasoned grounds to 9th century B.C. Aberg claims it as definitely 10th century, which is quite reasonable, and asserts—which is by no means so certain—that it is the earliest Iron Age cemetery in Italy. Partly as a result of this reasoning he claims that the Iron Age in Italy begins just about 1000 B.C., which has often been suggested before. At Torre Galli there was found a whole series of the peculiar T-hilted swords, some of bronze and some of iron. This then is the earliest place where they appear, and actually they are never found north of Central Italy. They are derived from sub-Mycenaean types and are claimed therefore as imports from the Aegean. Here also at Torre Galli is found the meander style of decoration which is so prevalent at Terni, while Egyptian scarabs establish the certainty of trade with the Aegean and the Orient. In brief therefore the key to the whole development of the Iron Age is the quickening of the native culture by Aegean influences coming through the door of South Italy, and of this process Torre Galli is at once the proof and the most striking example. It is trade with the Mediterranean, beginning long before Greek colonization, which brings Italy into touch with

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Greece and the Orient at the very beginning of the Dipylon stage. The author's task throughout the rest of his book is to trace the gradual spread of these foreign influences from one region to another, and to estimate their reactions on the vigorous though somewhat backward native civilization of the same periods.

In the second period of the Iron Age, beginning at 850 B.C., the interest shifts from Calabria and Terni to Southern Etruria. The pre-Etruscan section of this period, dated from 850-750, is very fully treated in what is perhaps the best part of the whole book. It is particularly satisfactory that the author should have greatly enriched our repertoire by working in so much material, hitherto neglected, from the museum of Villa Giulia. The lists of graves which are appended to this as well as to all the other sections will enable the student to test and weigh the author's theory to an extent that is not possible at a first general reading.

The Etruscan period in its two sections 750-700 and 700-650 is sufficiently well treated for a book which cannot go into much finesse of detail. There are many good critical observations, but the ground is so well known that there is little opportunity for novelties of theory. On the whole Aberg's handling is here rather conservative and he has little new to say. All this is a battle-ground over which the factions are still tramping. After the chapter on Central Italy comes the very important discussion of absolute chronology, with which the reader will find it useful to study also the concluding chapter (pp. 208-216) before proceeding to attack Northern Italy.

I could wish that this book had ended at p. 148, for it would have been pleasant to close with an unreserved congratulation to the author on his fine achievement. But it is inevitable that I should protest against much of the matter and method in the chapters dealing with Bologna and Este. These seem to me to give a quite unfair idea of the originality and importance of two great centres of independent development. Moreover they favour, by a very forced construction of the evidence, a scheme of chronology which is wholly unacceptable. In his treatment of the First Benacci period the author is quite orthodox in his chronology, placing the beginning at 1000 B.C. and the end at 850 B.C. But he does no justice to the workmanship of the time, and, by ignoring the fact that the finest engraved bronze girdles occur at Bologna before 850 B.C., he robs that city of the credit for the production of them. We are led indeed to suppose that Bologna was a perfectly benighted region until it was civilized by commerce with Etruria in the 7th century.

It is certainly not easy to decide whether the large vessels of hammered bronze which characterize both the Northern and the Southern Villanovans were first produced at Bologna or in Etruria. But before allowing ourselves to be convinced in favour of Etruria it is well to realize that Aberg's very plausible argument really depends almost entirely upon the assumption that the Bolognese examples are later in date, which is not necessarily true even on typological grounds. The author in fact introduces the new conception of a Third Benacci period of 700-650 B.C. and into this restricted time he proposes to crowd all the finest and most distinctive products of Second Benacci. It is a violent expedient.

My next objection to the Bologna chapter is concerned with the Arnoaldi period. I know of no reason whatsoever for placing the beginning of the Arnoaldi period as late as 625 B.C., and can find none in this volume. This is one of the most striking and certainly the most dangerous of Aberg's innovations. How much of an innovation it is becomes evident when the chronology adopted by previous writers is examined. Even Ducati, who always favours minimal datings, has recently placed the beginning of

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Arnoaldi at 650, while all the others, viz. Montelius, Johansen, Sundwall, and I, have preferred something nearer to 700 B.C. with a slight plus or minus. Aberg's statement is that the whole period is so uniform that it is 'scarcely thinkable' it should cover more than a century. The immediate answer to this is that others have found it perfectly thinkable, but neither the one statement nor the other amounts to being an argument. It may be conceded that it is extraordinarily difficult to find any fixed points to which Arnoaldi can be anchored. That it ends at 500 B.C. or only a few years earlier is universally admitted. But the upper limit is quite evasive and seems to be almost at the mercy of subjective opinion. I myself have relied a good deal on the synchronism furnished by the imported gold work of Vetulonia, but it is doubtless true that this *might* have been handed down. Nevertheless, as the only apparent synchronism it should certainly be allowed some value. It seems imperative, especially if he intends to base his Hallstatt chronology on Italian evidence, that Aberg should very clearly and explicitly demonstrate his argument on this very important point. A chapter at the opening of his second volume would surely be very appropriate—and might even convert those who at present see no reason to follow him.

The chapter on Este, which is the least satisfactory in the book, opens with an attack upon the reality of any First Period at Este. I sympathize with the attack, as the general belief in this semi-mythical period has done much harm. But I do not think that the Museum has ever classified tomb 236 as belonging to the First. Actually tomb 236 is of great interest. I have described it elsewhere as not only belonging to Second Benacci but representing the very earliest stage of that period at Este. With it, in any case, must unquestionably be associated several other tombs, from the close similarity of their contents. Consequently there is a small but very well marked group which on my dating would be early Second Benacci and on Aberg's would be 'Third Benacci'. In either event it is impossible for him to maintain that the Second Period of Este contains nothing earlier than Arnoaldi. And when we recall that his Arnoaldi is only to begin at 625 B.C. then surely everyone must agree in refusing to bring down to that date such objects as antennae swords and engraved belts of the Bolognese and Etrurian types! In short there is every reason to think that the beginning of the Second Este period is quite 150 years earlier than the author places it. After this it is a relief to find that the beginning of the Third Period at Este is correctly given as 500 B.C. It is a date as well attested by the evidence as any purely archaeological date can be.

In conclusion it must be made quite clear that my strictures on the treatment of North Italy must not be taken as implying any want of appreciation of the author's book as a whole. It is most valuable, alike for the fullness of its material and for the excellence of a great part of its criticism. There is no student of Italian archaeology who will not need to keep it on his shelves and to refer to it incessantly. D. RANDALL-MACIVER.

A HISTORY OF EARLY CHINESE ART. By OSVALD SIRÉN. *Vol. I, Prehistoric and Pre-Han Periods.* pp. xiv, 75, with 108 plates. *Vol. II, Han Period,* pp. xvi, 87, with 120 plates. *Vol. III, Sculpture.* pp. xvi, 70, with 128 plates. *Vol. IV, Architecture.* pp. xiii, 77, with 120 plates. Benn, 1929-30. £4 4s each; £14 14s the set.

Dr Sirén might easily have called his book 'Chinese Archaeology'. The reason why most writers on Chinese subjects avoid the word is probably that they have hardly any of the sort of data which form its basis in Europe. There is plenty of material;

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but the student is rather in the position in which biologists would find themselves if they had nothing of bird-life left to study except collections of eggs and possibly the works of Linnaeus and Buffon. Not that the Chinese literature which bears on their subject is half as helpful. A knowledge of the classic language would not have helped Dr Sirén much in compiling these volumes. The first deals among other things with the quite recent discoveries of neolithic pottery; one bowl (pl. 1, c) is of unusual beauty. It has a finish and symmetry equal, for instance, to that of the La Tène period jar (illustrated in colours in the Hercules Read memorial volume) now in the British Museum. Other pieces are obviously connected with the bronzes of the Chou dynasty; some bear inscriptions. Problems bristle: there are the jade daggers with turquoise encrusted handles, so curiously Mexican in appearance; there are the analogies between the Chou bronze patterns and the recent art of northwest America. Dr Sirén builds no theories, but suggests many, and the material he presents and discusses is what modern scholars regard as the significant material. The Yin bones are thoroughly discussed. Much space is devoted to the late Chou and Chin bronzes; and we are grateful for this prodigality. The author has had unique opportunities for the investigation of this group and gives us a variety of types which well illustrates these hitherto little understood styles, which seem to represent the relaxation of the tensely-wound patterns of the strict early designs of Chou. The collotypes are excellent in all four volumes, but in this especially one is impressed by their clearness; and study is further assisted by enlarged details in several cases.

The second volume introduces us to a fully-developed but rapidly changing civilization, the stable historical China of the Han dynasty. It is here that we begin to meet Scythian art; this is treated by the author definitely from the point of view of the civilized art of China which it influenced. Dr Sirén clearly emphasizes the difference between this strong but almost clumsy, certainly unresourceful art, and the sculptural inventiveness of the Chinese of this period, regarded by them as their classic age. Our own knowledge of it has enormously increased lately. Dr Sirén is as usual up-to-date in his references to the remarkable discoveries of lacquer, textiles, etc., accessible hitherto only in Japanese publications, and to the fruits of the Kozlov expedition.

Everything almost which is illustrated or referred to in these two volumes has been excavated. It has been the author's task to compare, to assemble, to draw conclusions, and present them; and this task, despite the difficulties of field-work, often in its absence, he has achieved.

The idea of devoting separate volumes to Sculpture and Architecture respectively is a sound one. In Europe, one is accustomed to look to these very subjects to supply the earliest examples and the most permanent memorials of a country's art. They are usually the first which the student encounters; they afford, too, the most obvious bridge from archaeology to art-history, and the safest. In China it is otherwise. Sculpture centres round Buddhism, and was coeval with the heyday of that religion, from the fifth to the fifteenth centuries: but neither Sculpture nor Buddhism influenced the Chinese in the same way that Christianity and Hellenic ideals in art influenced Europe, nor was the influence so lasting.

Dr Sirén's work in this field has been exhaustive; and he here gives us the cream of his researches. His critical ability, tested already in a rather analogous field, that of Italian primitive painting, here proves its worth. Of the volume devoted to architecture it is enough to say that there is nothing else like it, and that only the traveller, photographer, and scholar whose work we are considering could have produced it.

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Architecture, though not, like sculpture, a phase of Buddhist culture, bears only a slight relation to the general art-history of China; its development was independent, and it seems to have changed on the whole less drastically from age to age than other Chinese arts. There is really something here of the mythical 'cycle of Cathay'; certainly the last 50 years, in Europe, have produced more variety in building than all Chinese history. Medieval China still seems to stand and crumble much where it stood: hence the beauty and interest of Dr Sirén's photographs. He also draws interesting matter from Japan, always a hopeful repository of T'ang traditions and too much neglected by students in England.

Surveyed as a whole, the art of China constitutes something even less like a continuum than that of Europe; especially is this true of the later periods, from T'ang onwards, with which Dr Sirén will have to deal, if, on the solid foundation he has laid he ever cares to erect one or two more storeys. But so different is the treatment which these later periods require, that he will perhaps refrain. Pottery for instance, which down to the T'ang dynasty reflects in so informative a way the general art-tendencies of each period, becomes in later dynasties so specialized a subject as almost to justify the existence of those people, christened by M. Vignier 'céramographes', to whom for the most part the British Museum deutes the study of Chinese Art. Our other museum, at South Kensington, deutes it to nobody; but then it is unfortunately so organized that the study of the subjects Dr Sirén so usefully deals with under one head is necessarily divided between three or four separate and very water-tight departments; sculpture, ceramics, metal-work and textiles. There are few if any Englishmen who have had the opportunities necessary to produce such a work, which reflects credit alike on the author and on the Museums and University of Stockholm. W. W. WINKWORTH.

GESCHICHTE DES KUNSTGEWERBES ALLER ZEITEN UND VÖLKER.

Band 1. By DR H. TH. BOSSERT. pp. XII, 394, with 28 plates. Berlin: Wasmuth, 1928. 42 marks.

This work is planned as an encyclopaedia of decorative art, and if the promise and programme of this first volume are followed the editor and publisher will earn heartiest thanks and congratulations from all. Each section is entrusted to a specialist who, having devoted himself to the culture of one definite region, writes with accurate and particular knowledge. They thus form self-contained essays based largely on individual research. They are concisely and clearly written, well printed, and each is furnished with a series of excellent plates. The coloured plates are delightful and the photogravures of Scythic metalwork deserve special praise, as also do the ivories from Mycenae. Some of the composite plates of illustrations selected from various publications suffer from the blocking out process and from the odd assortment of sizes. A marble statuette from Karos appears as large as the throne of Minos. It would have been advisable to give the size of the originals or the scale of the reproductions, since the objects illustrated vary from small brooches to the car from the Oseberg ship.

The first section deals with the Ice Age and is a straightforward summary of man's earliest efforts towards artistic self-expression. Next Dr van Scheltema in fifty pages surveys decorative art in Europe from the Neolithic Age to the La Tène style. This, covering a wide area in time and space, is perhaps too much compressed and could have been more fully illustrated. The Age of Migrations which follows contains some of the finest plates. Specially welcome are the excellent reproductions of fibulae and those

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showing the amazing woodwork of the Oseberg ship. Dr Boroffka's lucid account of Scythian decorative art is most important, and in it his deep knowledge of the theme demonstrates the wide radiations of Scythic culture from Russia to China and the foreign influences which affected it from time to time. Very welcome is plate XI, which shows two of the stuffs found in Mongolia by the Kozloff expedition. Textiles are so rarely found on ancient sites that it is important to show that the beast style of the metal-work was equally popular in woven and embroidered fabrics. Professor Bosch-Gimpera's account of Spain and Portugal from Neolithic to Roman times places the Iberian style in its right context. The plates of bronzes and painted pottery give an excellent idea of typical designs, the dating of which was once so strangely misunderstood. A short section on Northern Africa is followed by a long and valuable chapter on Italy by Dr Matz who deals in a judicious manner with difficult problems, the early ethnology of Italy, the Etruscans, and the rise of Roman culture. He does full justice to the Etruscans, and does not consider them mere copyists of the Greeks. The Phoenicians are to him in the West Mediterranean as in the East the principal carriers of the orientalizing style. The same phenomenon occurred in Greece and in Italy simultaneously. Oriental influence acting on the native Geometric and Villanovan fashions produced in one the orientalizing style and in the other Etruscan culture. The Aegean civilization by the editor includes short accounts of Malta and Sardinia. For Crete he disregards Sir Arthur Evans' periods and divides Cretan culture into three stages: early Cretan from 4000 to 1700 B.C. to the destruction of the older palace of Knossos; middle Cretan from 1700 to 1400 B.C., to the destruction of the second palace at Knossos; and late Cretan from 1400 to 1200 B.C., the period that succeeded the downfall of the Minoan kingdom. Otherwise his estimate of the power and quality of Minoan decorative art is orthodox. For Mycenae and the mainland of Greece he adopts the three Helladic periods of their cultural evolution and throughout emphasizes the differences from Crete: 'Es war mehr eine kretische Tünche als ein kretischer Kern in dieser mykenischen Kultur'. He believes that Greeks were already in Greece in 2000 B.C. and racially different from the Cretans in whom he discovers feminine tendencies. Cyprus and the Cyclades are similarly treated and we pass *per saltum* to the South Seas and the East Indian Islands. Their primitive and semi-barbaric culture is an admirable foil to the early history of Europe and the Mediterranean and shows how similar forms of ornament may occur in peoples widely separated in race, space, and time, who can have had no connexion with one another.

A. J. B. WACE.

PHILOLOGICAL STUDIES IN ANCIENT GLASS. By MARY L. TROWBRIDGE. *Studies in language and literature*, vol. XIII, nos. 3 and 4. [University of Illinois, 1928 (received 1930). pp. 206. \$1.50.]

This admirable and laborious thesis on the ancient Greek and Latin literature relating to glass was written originally for a doctor's degree and then subsequently enlarged to its present size of 206 pages. The authoress has made a very large collection of classical passages on this subject, which, if not exhaustive, contains all important references down to the fourth century A.D., a work of great value to those interested in the early history of glass in Greece and Rome. So thorough is it in its use of classical quotations that it is, perhaps, unfortunate that, of set purpose, 'no attention is paid to the literature of other nations, Egyptian, Babylonian, and the like', because it is now becoming more and more obvious that numerous words were brought into the Greek

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language from the Near East, probably by traders, not only for natural products, from myrrh to mandragora, from marcasite to misy, but also for the discoveries of the early Assyrian chemists (for example: aventurine glass (*abnu sandu markhashitu* 'spangled red mineral') which is found in Pliny as *sandrasitae*. For this reason the authoress would have found a derivation for *kyanos* ('as yet the etymology is unknown') in the Assyrian word *uknu*, lapis lazuli, and blue glaze, long ago suggested by Jensen. Apart, however, from such small criticism as this, the book deserves all praise for the painstaking care which has obviously been bestowed upon it. It is a most handy book of reference to the classical authors' writings on the subject.

R. C. THOMPSON.

ANGLES, DANES AND NORSE IN THE DISTRICT OF HUDDERSFIELD.

By W. G. COLLINGWOOD. *Tolson Memorial Museum publications, handbook 2. Second edition. Huddersfield, 1929. pp. 62, illustrated. 1s. and 1s. 3d.*

Mr Collingwood's authorship of this useful and interesting guide to the stone monuments of the Huddersfield district was in itself a sure guarantee for the need of a second edition within a few years of the appearance of the first. Fulfilment of this need has given the author an opportunity to revise and add to the original text. A frontispiece in colour of the Berthsmuth cross at Thornhill serves to remind us that to the Angles as to other peoples in antiquity the stone from which the crosses were carved was merely a material more permanent than wood and had for them no aesthetic attraction of its own. Indeed in the earlier periods the lasting monuments raised to the dead, notably the Dewsbury cross, seem to echo the richly carved and painted woodwork which we know adorned the houses of the living. In the later monuments the growth of stone-building makes itself apparent. The sure touch of the wood-carver is temporarily lost in the first efforts of an as yet comparatively untried school of masons.

E. T. L.

ETRURIA PAST AND PRESENT. By M. A. JOHNSTONE. Methuen, 1930. pp. xv, 246, with 15 plates. 7s 6d.

The only unsatisfactory thing about this book is its portentous title. 'Etruria past and present' suggests folios the size of Dempster and learning as ponderous as the erudition of the Emperor Claudius. Actually we have before us a light and prettily illustrated little octavo written in a very pleasing popular form.

The authoress makes no pretence to originality but she has studied carefully and systematically under good masters, has travelled over a great deal of the country and read every book which bears upon any aspect of her subject. The result is a very good example of what this kind of popularization ought to be. As an introduction to a fascinating study in which all intelligent people ought to be interested *Etruria past and present* may be warmly commended. It will teach the novice nothing about *present* Etruria, which in any case he will prefer to estimate for himself, but a great deal about ancient Etruria and its inhabitants. All the information is perfectly trustworthy and there are no inaccuracies or careless statements. The descriptions, moreover, are remarkably complete, and the authoress deserves a word of special praise for including references to specimens in the British Museum. In a second edition a few superfluous pages of sentimental reflections and the fortunately brief chapter on Etruscan children might be omitted. Except for these the book maintains throughout a dignified style which is well adapted to its matter.

D. RANDALL-MACIVER.

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A HISTORY OF GREECE. By CYRIL E. ROBINSON. Methuen, 1929. pp. 380, with 33 illustrations, and 23 maps. 7s 6d.

EVERYDAY THINGS IN HOMERIC GREECE. By M. and C. H. B. QUENNEL. Batsford, 1929. pp. viii, 140, and 73 figs. 7s 6d.

It is rare to find a textbook, designed for the upper classes of schools and for university students, which is as enjoyable to read through as a novel, but this is true, *experto crede*, of Mr Robinson's *History of Greece*. Thoroughly up-to-date, it deals with the subject from a modern point of view, that is to say that, where it is possible, reasons are given for historical phenomena, and when this is not suitable, the narrative is terse and arresting. From end to end the reader is sustained by a feeling of confidence in both the accuracy of the writer's knowledge and his sense of proportion. The final chapter on 'the Hellenistic Age and After' gives a glimpse of the routes by which Greek thought and art have reached the later world. The photographic illustrations are delightful, but the end paper giving a diagrammatic view of ancient Athens is misleading. It is taken, we are told, from Mount Lycabettus, a fact which does not convey much topographically to the average reader; the points of the compass are not given, and so the Piræus appears to the north of the city. This false impression may remain with the less observant of the book's youthful readers. The maps and plans and chronological tables are good. There are small misprints on page 93, line 30, and on page 114, line 5. Plate XIX is bound opposite page 206 but its explanatory note is printed at the foot of page 260.

The new Quennell book is pleasant to handle, and many of the illustrations are even better than we have been taught to expect from the authors. The book begins very abruptly with a description from Apollonius of the Argonauts and their expedition. This is really not Homer, and might have been omitted. Next the *Iliad* and *Odyssey* are summarized book by book with comments. This plan spoils the story, and does not leave a clear impression of the chief incidents. The translation is not particularly pleasing: for instance, 'Eros took the opportunity to quickly string his bow and fit an arrow from his quiver, and shoot at Medea'. The last chapter deals in a very disjointed way with things: buildings, ploughs, looms, ships. Here the authors are on their own ground, and are at their best, and the descriptions and illustrations will help many people, both the young and others well past school age, to understand the material civilization of Homeric times.

This book, however, fails to give the atmosphere of the Homeric poems, and leaves an uneasy feeling that the authors are not quite sure of their ground. Their inability to understand the primitive nature of the period is evident from such remarks as the following (p. 31):—'This is an extraordinary thing, that Homer could have thought of a God as so human that he bellows out loud when he is wounded'. Yet the gods of an age long after Homer were still considered capable of weaknesses quite as human as this. Again 'the combatants, like the men in our own great war, fought, not because they loved fighting, but because fate drove them on'. But the Homeric word for battle means 'joy'. Finally, 'We have come to think of an acropolis as a sacred place, whereas the word only means city on high'. 'We' here must surely be limited to the authors, for throughout Greek history the acropolis is the fortress hill of the city, not necessarily the sanctuary. In the description of the Lion-gate at Mycenæ the pillar between the lions is alluded to as though it were an unimportant ornament instead of the emblem of a cult.

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The architectural sketches and reconstructions are ingenious and interesting, and real beauty is achieved in some of the former. The book will be very useful on the shelves of the school library. If the authors will read Mr Robinson's book their next volume should greatly benefit.

DINA PORTWAY DORSON.

A BABYLONIAN CITY IN ARABIA. By R. P. DOUGHERTY. *American Journal of Archaeology*, 1930, XXXIV, 296-312.

This is an article of a kind that might be written far more often. It is a summary of what is known about the oasis of Teima in Arabia. Teima lies between the Great Nefud on the northeast and Medain Salih (on the Hejaz railway) on the southwest. It also lies exactly midway between Damascus and Mecca, between the 27th and 28th parallels of latitude. Politically it is now under the control of Ibn Saud, ruler of the Hejaz. It has only been visited by seven Europeans, the first in 1848 and the last in 1909.

Professor Dougherty summarizes the scanty archaeological knowledge we possess, proves that Teima was the seat of the Babylonian court for part of the reign of Nabonidus (king of Babylon, 556-539 B.C.), who conquered it, and expresses the hope that so promising a site may be more thoroughly explored. The difficulties of excavation there might at present be considerable, but surely someone could make a rapid reconnaissance, photograph the ruins and bring back specimens of the pottery and flints that are said to cover the surface? Teima can be reached by taxi from Amman in Transjordan.

LES FOUILLES DE HADDA. Par J.-J. BARTHOUX. Vol. III, Figures et figurines, album photographique. *Mémoires de la Délégation archéologique française en Afghanistan*. Paris: Van Oest. pp. 26, 112 plates. 380 francs.

We are informed by the publisher of these *Mémoires* that volumes I and II of this series will not appear until the end of 1931. Volume I is to contain the text which will discuss the dating of these singularly beautiful and interesting monuments. Meanwhile the English reader may welcome a few particulars concerning the site which produced them.

Hadda is a village about five miles to the south of Jelalabad. It is the Hsi-lo (Hela) of the Chinese pilgrims. Hela was celebrated for its oracle, which the famous traveller Hsüan-tsang himself consulted (at the price of five pieces of gold) when he passed through the town c. A.D. 630. The history of the district is a complicated one. The Kushan (Indo-Scythian) kings continued to rule there after they had lost their footing in India proper, that is to say, from about A.D. 320. They were driven out at the end of the fifth century by the white Huns (Ephthalites), who are known to have been violent opponents of Buddhism. It is usually assumed that the stupas and monasteries of Hela were destroyed by the White Hun king Mihirahula about 530. We only know for certain, however, that he persecuted the Buddhists; we have no particular information concerning the fate of Hela. As confirmation of this supposed destruction European writers quote the statement of Hsüan-tsang that 'the stupas are in a state of neglect and decay'. A careful reading of the passage in the original shows, however, that this statement is meant to apply, not to the stupas of the kingdom of Nagarahara in general (thus including Hela, which was dependent on this kingdom) but only to the stupas of the city of Nagarahara, the capital.

The popularity of the oracle and of the Buddha-relics associated with it had established Hela as the local headquarters of Buddhism, at the expense of Nagarahara, when

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Buddhism was weak, but Hinduism flourishing; for in this moderate-sized town there were five Hindu temples.

The White Huns were driven out about 560, by the Sassanian rulers of Persia, and despite a succession of Moslem attacks, ruled at Kabul till about 871 when they were finally ousted by the Mohammedans.

The present album, consisting almost entirely of detached heads, is typical of the art that flourished under the Kushan rulers, wherever they appeared. Of this art we have two main phases: (1) 1st century B.C. to 3rd century A.D. with its centre in Gandhara proper; (2) 4th to 6th century, with its centre in Afghanistan, where the Kushans continued to rule after they had been expelled from India proper by the native Gupta dynasty.

It would seem at first sight that the figures of the present album belong exclusively to the second phase. There is however, the possibility of a third phase, extending from the expulsion of the White Huns (c. 560) to the fall of the Kushans (c. 871). Whether any of the objects here figured belong to this third period is a question that will be discussed in the introductory volume.

It is known that M. Barthoux carried on his extremely interesting researches under conditions of great difficulty, owing to the fanatical opposition of the local mullahs. It is to his courage and determination that we owe the present volume, as also the possibility of studying the Hadda finds at present exhibited in the Musée Guimet. A. WALEY.

HELLENISTIC CIVILISATION. By W. W. TARN. *Second edition.* Edward Arnold and Co., 1930. pp. 334. 16s.

The fact that a learned work, first published in 1927, has already gone into a second edition, proves that it has many qualities beyond mere learning to commend it. A detailed review in this case is unnecessary, but for the benefit of those who have not seen the first edition we may draw attention particularly to the *Historical Outline* (ch. i) which deals in a masterly way with the difficulties of the period from Alexander's death to 31 B.C., and the story of the contacts between Hellenism and the Jews (ch. vi). The book's value is greatly increased for the student by the inclusion, in this edition, of footnotes,* in the briefest possible form, giving the sources of statements in the text. To take a single instance, the statement as to the prevalence of infanticide in the Greek cities is absolutely convincing in view of the documents thus cited. Apart from the notes, and a few minor corrections, the second edition is practically the same as the first.

F. J. DOBSON.

THE COTTAGES OF ENGLAND: a review of their types and features from the 16th to the 18th centuries. By BASIL OLIVER. With a foreword by STANLEY BALDWIN, M.P. Batsford, 1929. pp. xxiv, 91, with 99 plates, and 38 figs. in text. 21s.

This is not only a beautiful book but an important one, for it deals with a subject which has not been treated as a whole before, though the cottages of one or two counties have been separately described. The stone houses of the Cotswolds, the Cornish granite, the cob-walls of Devon and Dorset, the timber-framed cottages of Hereford, Salop and East Anglia, the use of brick and flint in Norfolk and Suffolk, the plainer and harder work of the Northern counties, all these and many more are described and admirably

* We would like to draw the attention of all other publishers to this fact.—EDITOR.

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illustrated. And the various styles are not merely described: the reason for their prevalence in any district is given, the methods used in their construction are explained, and the peculiar features and details proper to each district are dwelt upon. There are dissertations on the making of cob and mud walls, on plastering and pargetting, and more especially on thatching, which are of great practical value.

In Mr Baldwin's words, we can 'only hope that this volume will find its way into the hands of as many as possible of those who have to do with the maintenance, preservation or creation of cottage buildings throughout England; whether they be architects, builders, landlords or just ordinary folk'.

ED. H. GODDARD.

MUSÉE ARCHÉOLOGIQUE LIÉGEOIS: catalogue sommaire de la section pré-historique. By J. SERVais and J. HAMAL-NANDRIN. *Liège*, 1929. pp. 148.

In a recent number of *ANTIQUITY* (IV, 255) the Editor drew attention to the importance of the Musée Curtius at Liège. Since his visit an excellent Catalogue of the Museum by J. Servais (Keeper) and J. Hamal-Nandrin has been issued with the aid of a subvention from the city at the low price of 12 francs. The work begins with an unusually clear and well-balanced summary of prehistoric periods in which full value is assigned to the East Anglian evidence for Pliocene man, and the independence of Tardenoisian as the culture of an epoch is properly queried. In this section, and elsewhere, a number of important specimens in the private collection of Hamal-Nandrin are figured. The description of the Museum cases that follows this introduction is admirably designed to elucidate to the visitor all points not explained by the exceptionally instructive labels attached to each. The full descriptions and 455 illustrations make it, however, eminently useful also to those who are not fortunate enough to be able to visit the Museum itself. Of special interest are the comb used for decorating Omalian (Danubian) pottery, the very British-looking leaf-shaped arrowheads and the palaeolithic remains from the famous cave of Spy. In short, here is a model guide both from the standpoint of the native layman and the foreign student.

V. GORDON CHILDE.

THE LANDS OF THE EASTERN CALIPHATE: Mesopotamia, Persia and Central Asia; from the Moslem Conquest to the time of Timur. By G. LE STRANGE. 2nd impression. *Cambridge*, 1930. pp. 536, and 10 maps, 211.

A reviewer must first express his thanks to the publisher for reprinting this invaluable handbook. It is just a quarter of a century since its first appearance, and it had become difficult to secure copies. The very short list of emendations published is a fine tribute to the scholarship of the author, and shows that for once a reprint of the original, without alteration of pagination or maps, is fully justified.

The book is an encyclopaedia of geographical information, derived from original and often untranslated Arabic writings. It surveys the world of the 'Arabian Nights'—and much more besides—extending from the Mediterranean to the Indus and from Turkestan to the Persian Gulf and Arabia. It was a world that basked in the sunlight of civilization at a time when our's was clouded by the Dark Ages. While Alfred was struggling with the Danes, the Caliphs were laying out palaces at Samarra on a scale and in a style which has never since been achieved. Although the blight of Islam, the tyranny of the Written Word, inhibited that civilization, yet it reached a height greater than any since attained in that area. The picture of the whole which we form in our mind after reading this book is one of a large region rejoicing throughout in a high

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degree of material prosperity. It is a world that has vanished almost completely, leaving hardly a trace behind except such as may be found by the archaeologists of the future (for only a very few of those past and present have studied it). The Mongols of the 13th century wiped it off the map. To all who are not specialists in Oriental Studies it is almost an unknown world, for the original sources are both inaccessible and difficult to master even in translations. It is not until the ground is cleared, in a geographical sense, by one of our own time and culture that we can begin to understand it. To such the present book will be an indispensable companion. Would that someone would compile similar handbooks for the rest of the Arab world! One for Arabia is badly needed, and the material exists in abundance.

HORACE'S SABINE FARM. By PROF. GIUSEPPE LUGLI. Translated by GILBERT BAGNANI. Rome: Via Dora I, 1930. pp. 71, with 15 plates and 2 maps. 8 lira.

All lovers of Horace, all teachers of Classics and all Roman archaeologists should welcome this little book. The author gives a short account of the search for the exact site of the villa, from the 16th century onwards. He describes the valley of the Licenza, the scenery round the house and the features of the beloved farm—its woods of elm and oak, its pastures and cultivated fields, its spring of water, its gardens, orchard, vineyard and olive grove—all illustrated by quotations from the poet, as well as by a map of the district, prints and photographs. The excavations carried out by the Italian Ministry of Public Instruction in 1911 and two years later are concisely and clearly described, with a plan of the villa, and numerous illustrations of the remains of the building and of the fragments of frescoes, pavements and other objects found *in situ*. All goes to bring before one a picture of the airy well-planned house, the bright and shady gardens, and the beautiful surroundings which the poet loved so well.

J. WILLIAMS-FREEMAN.

JULIAN THE APOSTATE. By W. DOUGLAS SIMPSON. Aberdeen: Milne and Hutchinson, 1930. pp. 127, and 5 plates.* 7s 6d.

Because he opposed their religion, Julian has for centuries been abused and vilified by those who call themselves Christians. Even the word 'apostate' has acquired an unduly sinister connotation, suggesting a state of more than ordinary wickedness. Conversely, Constantine, who killed his son and scalded his wife to death, is generously described as 'the Great'. It is only within recent times that historians, released from intellectual bondage, have been able to exercise their free and independent judgment without fear of abuse, or worse; and even this freedom is sometimes threatened when current events are involved. Julian was not, perhaps, one of the greatest characters in history, but he was certainly not a monster. Had he not been cursed with what Mr Simpson calls a 'Messianic' temperament, he would have gone down to history as an exceptionally talented general and administrator. He lived in a phase of civilization which was not suited to his peculiar gifts, and consequently he failed in what he regarded as the main purpose of his life; but his failure was merely that of supporting a lost cause. It is interesting to speculate upon which side he would have been found if he were born again today.

Mr Simpson has written an admirable and scholarly monograph which will be read with pleasure by all who care for historical biography.

* Almost simultaneously there was published *La Vie de l'Empereur Julien*. By J. Bidez. Paris (*Les Belles-Lettres*). pp. x, 408. 25 francs.

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THE SAXON CHARTERS OF WORCESTERSHIRE. By G. B. GRUNDY. Part I. Transactions of the Birmingham Archaeological Society (1927), 1929, vol. 52, part 1, pp. 1-183.

The county of Worcester is very rich in charters with appended boundaries, largely owing to the fact that in the 11th century transcripts of the Priory charters were made by the monk Heming, and that these have come down to us in the Cotton Collection in the section Tiberius, B.13. There are nearly 50 of these charters, and the remaining land grants with boundaries—these for the most part unconnected with the Priory—bring up the whole number of extant boundary charters relating to lands within the county to about 100. These give details of some 90 land units, having a total area of more than 200 square miles out of the 750 square miles which is the area of the ancient county of Worcester.

Dr Grundy therefore, in undertaking the identification of the boundaries attached to these Worcestershire charters, has had material which has enabled him to deal with land units covering rather more than one quarter of the county. As would be expected from his papers on the Hampshire and Wiltshire charters in the *Archaeological Journal*, he has given us what are in most cases convincing identifications of the pre-Conquest boundary marks with places and sites shown on modern large-scale maps, or topographically identifiable by reference to existing physical features.

The charters dealt with in this volume concern places in the county from Abberton to Mangersbury, with a few omissions, which will no doubt be supplied when the second half of the alphabet is published. Seven Gloucestershire charters are included, and this is a matter of some regret if it indicates that Dr Grundy has no intention of giving us an exposition of the boundary charters of that county in a separate communication, which would deal with all the 45 charters that are extant. These are in no way of less interest than those in the Worcestershire collection, and one might also plead for the inclusion of the few Warwickshire charters relating to land units within the ancient diocese of Worcester.

A number of the sets of boundaries investigated by Dr Grundy follow existing lines of demarcation more or less exactly, and do not present many serious difficulties in the determination of the location of the points given in them. But there are not a few in which the lines cut across existing boundaries, and often contain not a single name which is recognizable as a survival of a pre-Conquest appellation. As an example of the skilful and painstaking way in which Dr Grundy has dealt with such cases attention may be called to his treatment of the Wearsetfelds charter (Birch, 455).

The elucidation of these Worcestershire boundary charters not only renders the greatest service to those who are interested in the topography of the county, but, as Dr Grundy remarks in his introduction, it provides much material for the social and economic history of England during the pre-Conquest period.

F. T. S. HOUGHTON.

PERU FROM THE AIR. By LIEUTENANT GEORGE R. JOHNSON, with text and notes by RAYE R. PLATT. *American Geographical Society, New York, 1930 (publication no. 12). 150 plates. Price not stated.*

We put this book down, after reading it, with the conviction that it marks an epoch in the dissemination of geographical knowledge. The series of air-photographs of Peru published in it give one a better idea of Peru than anything else could, short of an actual visit. In future students of geography will learn about the physical characters of a region

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by consulting albums of air-photographs. There is needed only to supplement it an Atlas (such as that of Finland, for example) giving what an air-photograph cannot give—the distribution of certain things over a large area.

There are some surprising views of Inca palaces which, with their rectangular lay-out, have a strangely modern look. They are revealed by the same shadow-process as the ruins of Samarra which, in a distant way, they resemble. One longs for vertical rather than oblique views of them, though recognizing the advantages of an oblique view for books like this. We are informed by the same Society that further photographic work is being carried out, with special attention to such ancient sites.

The photographs are altogether admirable, and reveal a high degree of technical efficiency, as well as a sense of pictorial fitness. The publication of such an expensive book reflects the utmost credit on all concerned. We should like particularly to congratulate the American Geographical Society on its enterprise in this direction. Is it not about time that something of this kind was produced within the British Empire? So far we have neglected all our opportunities.

PREHISTORIC MALTA: the Tarxien temples. By Sir THEMISTOCLES ZAMMIT.
Oxford University Press, 1930. pp. 143. 12s 6d.

Sir Themistocles Zammit has carried out a great work in Malta. He had already earned the gratitude of all students of the megalithic cultures of the Mediterranean Basin and their distant offshoots in Britain and elsewhere, by the prompt and periodical publication of the results of his excavations on the Tarxien temples. Now he has added to the debt by collecting and summarizing his results and publishing them in a more accessible and popular form.

The importance of the work recorded is so great that it is justifiable to point out certain blemishes in its presentment (for some of which the author may not be responsible). Many of the photographs are not worthy of their subjects and do not compare favourably with those published in *ANTIQUITY* in March 1930: e.g. plate III, fig. 3, which has been so badly touched up as to destroy its value as a record. The plan is inserted in such a way as to make its use as inconvenient as possible and it is on much too small a scale. It is made more confusing by the use of outline only to indicate both paving and 'vertical' stones, while 'horizontal' stones (sometimes used as paving) are shaded. The position of the 'small court J' (p. 19) is not indicated. The maps on pp. 2 and 3 are on the same scale, and contain practically the same information, but contradict each other in detail—e.g. the position of the Cordin buildings and the extent of the Misida creek.

The student receives a slight shock when he reads that 'in Malta, as everywhere else in Europe, the Bronze Age period represents a decadence from the Neolithic' (p. 121), and he is not comforted when he finds that one of the two references supporting this statement is Mr Massingham's *Downland Man*.

Throughout the book Sir Themistocles calls the earlier of his two periods 'Neolithic', and the later 'Bronze Age', without qualification; but, accurate as these terms may be from a purely local standpoint, they will not bear the test of wider application when an attempt is made to relate the Maltese cultures to the development of Mediterranean civilization as a whole. In this connexion we naturally turn to Crete and find that Sir Arthur Evans has collected irrefutable evidence of Minoan influence on the Maltese monuments of Sir Themistocles' 'neolithic' period, while the Aegean relations are equally clear: Sir Arthur's conclusion is that these external connexions lie 'well

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within the limits of the Chalcolithic age in the Mediterranean region'.* Moreover a study of the photographs illustrating the recent article in *ANTIQUITY*, particularly plate VIII, makes it scarcely to be believed that a metal tool was not employed to dress some of the stones.

The importance of this book is such that we ask for more information; especially for structural details of the buildings which might elucidate their connexion with other probably cognate monuments such as the navetas of the Balearic Islands, and the Giants' Graves of Sardinia. We should especially like to have the complete plan of the forecourts at Tarxien and elsewhere, and also to know more about the extent and nature of the 'boundary' walls.

W. J. H.

DAS STADTBILD JERUSALEMS AUF DER MOSAIKKARTE VON MADEBA.

By PROF. DR PETER THOMSEN, Dresden. *Reprints from the Zeitschrift des Deutschen Palästina-Vereins* for 1929 (vol. 52), pp. 149-174, 192-219, 290-310.

Professor Peter Thomsen has been editor of the *Palästina-Jahrbuch* for many years, and there can be few, if any, who are better acquainted with the literature of research in Palestine. How extensive the literature is will be evident to anyone who glances at the references with which he has documented this study of the picture of Jerusalem on the mosaic map at Madaba.

Two of the earlier sections of the work before us are devoted to a discussion of the position of the mosaic in question in the general history of cartography and in the history of representative art, and it seems to us that Professor Thomsen has defined the position very happily and very truly. The map belongs to the latter half of the 6th century, and it shows that there was no decline at this period. Byzantine cartography, on the contrary, represents the perfection of previous Roman and Hellenistic efforts, and when one compares this map with the *Pentinger Table*, for example, and considers at the same time the intractable material in which it is executed, one cannot but endorse Professor Thomsen's judgment.

The Madaba map is of inestimable value and interest to us, but the mosaics which we have found at Jerash lead us to question whether Professor Thomsen may not in the later sections of his work have exaggerated the contemporary significance of the map. In these sections the author discusses the artist and his sources: the artist he identifies with a certain Salamanianus whose name appears apparently as that of the maker on a mosaic in a church dedicated to the Apostles in 578-9 near the southeast gate of Madaba. His grounds for the identification are, briefly, that Salamanianus must have been a famous mosaiciat, otherwise he would not have signed the mosaic in the Apostles' church; the map must have been also very famous and would certainly have been mentioned by pilgrims if it had not been too late in date for those who visited Madaba to have seen it; and that, lastly, the style of the two mosaics is very similar. Only the last point is really decisive and we next ask, are the two mosaics really so much alike? Professor Thomsen does not give any evidence on this point: he has only paid one hurried visit to Madaba himself and he does not refer to any adequate illustration of the Apostles' mosaic which would enable one to form an opinion. Elsewhere, unfortunately only in a footnote (p. 163), he refers to the absence of any comprehensive work on the mosaics of Palestine and Syria. Comparatively few of them have been adequately published in colours or in photography, and until a proper series is available for study one can hardly be too cautious in dating mosaics on stylistic grounds. Is there any archaeologist today

* *Palace of Minor*, II, 1, § 2.

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who would agree with De Rossi in his controversy with Renan about the date of the Kabr Hiram mosaics?

Professor Thomsen conjectures further that Salamanius was a monk, in all probability, practising in later life a craft which he had acquired in his youth and depicting the Holy sites and places of pilgrimage as he had learnt to know them on his own travels. If the good Salamanius was a monk it is a curious thing that he did not mention it on his inscription, and as to his source we imagine that it was not his own travel-notes but a book of patterns compiled for the use of church decorators. At Jerash we found two series of topographical pictures. In SS. Peter and Paul's, a church which was built probably in the first decade of Justinian's reign, there were pictures of Alexandria and Memphis; in S. John Baptist's, which is dated 531, there was another view of Memphis on the south side of the church, and on the north side another view of Alexandria and two places we are disposed to identify with Canopus and the shrine of SS. Cyrus and John (see *Illustrated News*, 23 November 1929). These views differ slightly in detail but obviously go back to a common original, the author of which, like the author of the Madaba map, was only interested in ecclesiastical buildings. The tremendous amount of church-building at this time led, we suppose, to the production of a number of pattern books specially arranged for church works, and the original of the Madaba map is to be looked for in one of these. And in this case, of course, it would not have seemed so precious to contemporaries as it is to us, nor need we suppose the maker to have been a famous artist.

The longest and most valuable section in Professor Thomsen's paper deals with the details of the plan, or picture, of Jerusalem and the identification of the various buildings there portrayed, and it is illustrated with an admirable coloured reproduction of a painting by Father Maurîus Gîsler. Apart from the towers, gates and streets, there are thirty-five buildings to be identified in a mosaic which measures only 54 by 93 centimetres, and the fact that three masters of the topography of Jerusalem such as Professor Thomsen, Père Abel and Father Gîsler, are agreed as to the identification of the majority of these is a fine testimony to the skill of the mosaicist. It also shows on what a solid basis our knowledge of post-Constantinian Jerusalem rests, compared with the flimsy grounds of our knowledge of the pre-Christian city, and this although there is not much more left above ground of the city of Justinian than there is of the city of Herod. From the topographical standpoint the most important identification is that of the 'New church of the Virgin-Mother', dedicated by Justinian in 543, which was not in the courtyard of the Haram where the mosque El Aksa stands, but to the southwest of this. Its representation on the map is an indirect confirmation of the date of the mosaic.

We are not convinced by the arguments put forward by Professor Thomsen as to the name of the mosaicist, but the section which is concerned with this is one of the shortest sections in the two articles, and the remainder of the study fills us with feelings of profound admiration. Professor Thomsen has laid all who are interested in the Holy Land under another deep debt.

J. W. CROWFOOT.

THE MINES OF MENDIP. By J. W. GOUGH. *Oxford University Press*, 1930. pp. x, 270, with 2 maps. 15s.

Cornwall excepted, no area in the southern half of England shows clearer traces of bygone mining operations than the Mendip Hills, but although the lead mines inseparable from the name of Mendip have only ceased to work within living memory and are of

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immemorial antiquity, no connected account of their history has been available until now.

There is no direct evidence of pre-Roman lead mining on Mendip, though the numerous traces of the metal found in the Glastonbury lake village show that it was certainly mined, but with the Romans an intensive activity started in the Charterhouse region as early as A.D. 49—a date attested by the earliest known Roman inscription in Britain cast on a pig of lead found in that neighbourhood. There is some doubt as to the precise methods adopted by the Romans, but it is probable that they smelted their lead on open hearths.

Their process was so wasteful that about 20 per cent of the lead was left in their slag, though this may be accounted for by the probable economy to them of partially smelting a profusion of rich ore.

Cupellation of the lead for silver was also carried on. It is a matter for regret that the site of the Roman lead works has never been systematically examined, for there is ample evidence that a fair-sized community centred round them, and the meagre information available has been collected in a casual way through an early visit to the site by Colt Hoare and Skinner, finds made in farming the land, and in re-smelting the Roman slag heaps.

It is probable that mining activity declined after the time of Marcus Aurelius and no big exploitation of the Mendip ores was to take place till the 16th century. Mining was certainly in progress during the Middle Ages and may even have been carried on feebly by the Anglo-Saxons, but the main object of the lead industry in the medieval period was the production of silver.

The constitution of the mining industry began to emerge with the division of the area into four regions under Lords Royal, who probably gained their privileges between 1366 and 1386 through the removal of the forest rights of the king. With these came in the custom of the payment of 'lot lead' by the miners—a tenth of all the lead produced. It has long been a belief that a definite code of laws governing the conduct of the industry was the outcome of the 'Great Debate' held at Green Ore under the presidency of 'Lord' Chocke in the reign of Edward IV, but the author shows that this was more probably concerned with the regulation of grazing rights, and that no codification may be looked for before the reign of Elizabeth. Although Mendip was a free mining district governed by a special local constitution and exploited by working miners the appearance of democracy was unsubstantial because the organization made definitely for the profit of the Lord Royal, and the mineral courts were for all practical purposes manorial.

An alliance between German technical knowledge and English capital gave a great impetus to all forms of English mining in the 16th century and Mendip felt its influence so much that the most prosperous period in the history of the area set in, reaching its climax in the years following the Restoration. After that the primitive methods of the miners rather than the exhaustion of the ore caused a steady decline.

The chief enemy of the miner was water, which filled his 'rake' before he had followed the ore to any great depth, and the configuration of the hills as a plateau with few marked irregularities on the summit made the cutting of lateral drainage adits impracticable. It is not surprising, therefore, that twice in the 17th century determined efforts were made by two engineers, Bevis Bulmer and Bushell, to devise a successful drainage scheme, but in each case the venture was a failure, to which the obstructionist tactics of some of the miners contributed.

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Fire was the only device used for splitting rocks till the very late days of the industry, and the primitive nature of many of the other processes may be judged from this.

It is interesting to learn that the notable absence of inns on the upland of Mendip which is apparent at the present day is ultimately due to the suppression of public houses by the order of James I for the discouragement of the violence and riot for which the miners were notorious.

In the 18th century the decline was rapid. Capital fought shy of the mines, new methods were wanting, and the exhaustion of readily accessible ore threw the miners back upon the re-smelting of the old slag heaps. Even then the value of the lead recovered was steadily lowered by a progressive decline in the price of the metal in the face of foreign competition, but the advent of machinery and more efficient furnaces tempted several persons to try a revival of activity in the latter half of the 19th century. The record of these attempts is one of almost unrelieved failure and provides little more than the leading case of *Hodgkinson v. Ennor* about the pollution of the water from the St. Cuthbert's lead works near Priddy which, sinking through the hills, came out of Wookey Hole and interfered with the processes at the plaintiff's paper mills.

Severe handicaps imposed on the washing of the ore by an adverse decision, and a continued fall in the price of the metal, proved fatal to all these enterprises save one. The Roman slag heaps at Charterhouse were re-smelted at a profit which was enhanced by the use of the Pattinson process for the economical recovery of the silver content of the lead.

Mr Gough completes the history of Mendip mining by describing the calamine industry, which enjoyed a fair prosperity during the 18th century, first on the high ground north of Wrington, and later round the villages of Rowberrow and Shipham, and also by recounting the efforts, all futile, to mine for manganese, iron, copper, and coal.

The author is to be congratulated on a very painstaking and readable piece of research.

C. W. PHILLIPS.

WILTSHIRE BIBLIOGRAPHY: a catalogue of printed books, pamphlets and articles bearing on the history, topography and natural history of the County. *Compiled by* CANON ED. H. GODDARD, F.S.A. *Published by the Wilts Education Committee.* 1929. pp. viii, 276. 4s 6d.

For many years Canon Goddard has carefully recorded in the *Wilts Archaeological Magazine* very full annotated lists of current literature relating to Wiltshire. He has even included obituaries from the local press, ensuring in the majority of cases a source for biographical information which would otherwise be difficult to find. Besides this he had prepared in manuscript (in 5 volumes) a bibliography which included earlier books and references relating to the county, one copy being deposited in the Devizes Museum and the other in the library of the Society of Antiquaries of London. Use which could be made of this manuscript list was therefore limited, but fortunately the value of Canon Goddard's labours has been recognized by the Wilts County Education Committee and it is now in print, though owing to the cost of production it has been necessary to omit references to various publications and certain bibliographical information. While we regret it was not possible to issue the work in a form which would compare with the well-known volumes relating to Gloucestershire, Somerset and Cornwall, it is a most welcome addition to county bibliographies and one which cannot fail to be of use to those interested in local history.

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THE ANCIENT BRIDGES OF THE SOUTH OF ENGLAND. By E. JERVOISE, A.M. INST. C.E., on behalf of The Society for the Protection of Ancient Buildings. With an introduction by C. R. PEERS, Chief Inspector of Ancient Monuments. *The Architectural Press*, 1930. pp. xvi, 128, with 79 illustrations. 5s 6d.

The tremendous increase in motor-traction is affecting the amenities of towns and the peace of rural areas, and with the widening of roads many of the structures which carry the latter over rivers and streams are in danger of destruction. Our older bridges were not built to sustain the loads which fill the enormous transport-lorries using the highways and this, combined with the widening of roads which is in progress everywhere, seals the fate of many a picturesque bridge. Modern engineers think in steel and concrete, and in spite of public outcry they more often than not have their way and one more example of brick and stone construction of a former age disappears. It is well therefore that before it is too late there should be a record of our ancient bridges and we welcome the work to which the Society for the Protection of Ancient Buildings has put its hand.

Mr Jervoise has spent four years in surveying the whole country and has collected a great deal of information which it is valuable to have on record. The present volume is the first of the series to be published as the result of his investigations and includes the area comprised by the counties south of the Thames with the exception of Devon and Cornwall. The latter are omitted as accounts of their bridges have been written. In addition to a description of each bridge Mr Jervoise includes historical particulars obtained from the public records and local sources, and with the addition of photographs he gives us a most useful fund of information about a subject upon which little has hitherto been published.

ROCHESTER BRIDGE, 1387-1856: a history of its early years compiled from the Wardens' Accounts. By M. JANET BECKER, with a foreword by S. C. RATCLIFF, secretary of the Historical Manuscripts Commission. *Constable*, 1930. pp. xvi, 123, and 10 plates. 10s.

While the work noticed above deals with existing bridges Miss Becker's book is confined to the history of one which was demolished after a life of nearly 500 years. By good fortune the wardens' account rolls from 1398 to 1479 are preserved and these have provided information of which nothing of the kind has been printed before in such complete form. The bridge chapel, the lands with which the bridge was endowed, its maintenance, and the wardens and their administration of the trust property, are fully dealt with, and the book is an admirable example of the interest which can be extracted from local archives.

Owing to great pressure on our space several reviews in type have to be held over.

Mr J. B. Priestley

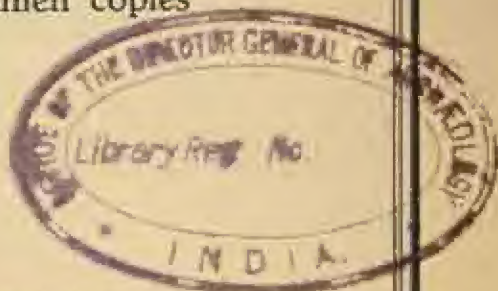
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HISTORY

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Antiquity

A Quarterly Review of Archaeology

VOL. V No. 18

JUNE 1931

Editorial Notes

ENGLAND is the home of paradox; and it is not therefore surprising that a country which has produced some of the greatest pioneers of scientific archaeology should be open to the charge of neglecting its own origins. We are not for the moment thinking of the prehistoric period, though much that we shall say applies with equal force to that period; nor, on the other hand, are we criticizing the activities of the State or the leading societies and museums. These all have played their part in maintaining, by endowment and organization, the study of British archaeology and the conservation of British antiquities and records. What we have in mind is the astonishing fact that, so far as we are aware, there exists no University Chair of what may be called Old English Archaeology.



We use the expression 'Old English Archaeology' to cover the antiquities of the Saxon, Danish and Norman periods. Of pagan Saxon antiquities (falling between, say, A.D. 450 and 650) such knowledge as we have is concentrated in a very few individuals whose numbers are barely maintained, much less increased, as the years go by. It is to be feared that, unless the situation is retrieved by the endowment of a chair, this knowledge may lapse altogether. Nor is it altogether to our credit that some of the most recent monographs on Anglo-Saxon antiquities should have been written by distinguished continental

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scholars like Aberg and Roeder. That we sincerely welcome such contributions to knowledge goes without saying ; but we do so with a slight feeling of shame that our own garden should have to be tended by our neighbours.

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The number of specialists in Anglo-Saxon archaeology is indeed extremely small. We doubt whether there are more than half a dozen people in the whole country who know the difference between a Saxon and a Jutish brooch, assuming for the moment that any such difference exists. Such a state of affairs is a definite obstacle to progress, for without a lively atmosphere of informed criticism, without constant discussion and the occasional re-examination of first principles, opinion is bound to crystallize into dogma. Probably no one knows and regrets this so much as the expert himself ; for what is more profitable or more pleasant than to talk about the problems of one's own period with someone else who is trying to solve them ? Moreover there is the risk that, as time goes on, some critic may discover that the foundations are built on sand. We have often wondered whether the foundations of Anglo-Saxon archaeology are well and truly laid. We know of no modern attempt to lay bare and examine the first principles upon which it is based.

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Contrast this state of things with that obtaining in Romano-British archaeology. Here the number of students is large and the foundations secure. What is the reason ? By general agreement it can be attributed to the influence of one man—the late Professor Haverfield of Oxford—whose former pupils are still working under his inspiration. Professor Haverfield was able to accomplish his great work because he had the leisure and opportunities of personal contact afforded by a University Chair. It is to the Universities that we look for a lead, and particularly to those most concerned with historical teaching. For historians are agreed that in archaeology (together of course with the study of place-names) lies the chief hope of light in their dark places ; and we feel confident that the policy we advocate will have their warm support.

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Few people, again, realize the extent of our ignorance about the archaeology of Britain during the centuries before and after the

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Norman Conquest. Take the two most important classes of remains—pottery and earthworks. Is there a single pot that can be *proved* to belong to the period A.D. 700–1000? Such may exist, but even so there is certainly no general knowledge of the wares of the period. There cannot be until a habitation-site, deserted about 1000 and not re-occupied, has been scientifically excavated; or until a 'sealed' find of such pottery comes to light in some other way. Of Saxon and Danish earthworks we know, from archaeology, nothing. There are certain towns, such as Wallingford, Cricklade and Wareham, enclosed within rectangular ramparts that are generally, and probably rightly, regarded as of late Saxon construction; but this has never been proved, or even tested, by excavation. There are many places where the Danes are known, from statements in the Chronicle, to have 'wrought a work'; but not one of them has been excavated. Of relics of the Danes themselves we possess a few battle-axes, but no pottery whatever that can in any way be associated with them. Being but temporary raiders they may not have made pottery, which under primitive conditions is nearly always the work of women; but they can hardly have lived a whole winter at places like Thanet, Sheppey, Nottingham and York without at any rate using the pots of their unwilling hosts; and even a few fragments of these would be welcome.



Of Anglo-Saxon earthworks we know hardly anything. Of the period 700–1000 the only remains which are known to survive are Offa's Dyke and the before-mentioned town-ramparts.



This state of affairs can only be remedied by the appointment of a Professor of Old English Archaeology at one of our leading Universities. It would be essential to appoint a trained archaeologist, not merely a historian who is interested in archaeology. Such a man could create a School and do the work, of guidance and inspiration, that has at present to be done by overworked college tutors and museum curators. The necessary funds might be found by abolishing a few of the many useless professorships that abound. However, this is perhaps an idle dream. New endowments are usually reserved for those who tread the well-worn tracks of history, art and literature, or for subjects which might well be left to look after themselves. Was there, for instance,

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any urgent demand for a Chair of Belgian Studies (whatever they may be) at London University? Would not a Chair of Old English Studies have been more appropriate?



We have very gladly assented to the wish of the Director of the British Museum that we would insert in the present number the memorandum on Treasure Trove prepared by him. We may also mention that his paper on 'The Law and Practice of Treasure Trove', printed in *The Antiquaries' Journal*, July 1930, is full of interest for those who wish to know more on this subject, about which very hazy ideas are held.



We feel we owe an explanation to our readers and also to authors and publishers for the delay in printing reviews of some of the many books we receive. We very much regret it, but it is inevitable. The number of books, many of them very good books, appearing nowadays is so great that it is difficult to deal with them adequately. We intend in our next number to print a list of Books Received which we cannot, for the reason mentioned, review at length. Meanwhile we cannot forbear mentioning three outstanding books that still have to be reviewed—Sir Arthur Evans' *Palace of Minos*, vol. 3 (Macmillan); Professor Oswald Menghin's *Weltgeschichte der Steinzeit* (Anton Schroll, Vienna); and Mr R. G. Collingwood's *Archaeology of Roman Britain* (Methuen). Though differing entirely in character, each is a landmark in its way, whether of synthesis, of succinct statement, or of the progress of knowledge.



We regret that the plan of Cissbury Camp facing page 67 of our March number was incorrectly described. With the present issue is enclosed a revised print which should be inserted in its place.

The Ordnance Survey

by Sir CHARLES CLOSE

Formerly Director-General, Ordnance Survey

THE connexion between Maps and Archaeology is of a very obvious and straightforward nature. All distributional problems must, for instance, be studied on maps. If we want to find out about the distribution of the beaker folk, we must plot on a map the finds of the beakers; or if we desire to learn the area covered by examples of the 'lanternes des morts', a map of France is essential; the same applies to the study of long barrows and to a very great variety of archaeological studies. Moreover, in a more restricted sense, maps of sites are of the essence of the study of antiquity; we cannot understand the strength of the defences of the ancient Jebusite city unless we pore over the map of the excavations on the spur of Ophel. The excavations of every site are unintelligible without an accompanying map. In a still more restricted sense, each 'find' requires to have its position stated by the three co-ordinates of map-making: namely, its distance north or south, east or west, from—and above or below—some datum point in the excavations. Further, the maps themselves may furnish the only record left of some relic of antiquity. And, lastly, ancient maps—and our present-day maps will one day be ancient—are valuable records of the past, of the culture of the age they represent, of population, human distribution and settlement, and, to some extent, of the science and art of the times. It is much to be regretted that so little map-making was done in ancient days. We should give a good deal for accurate contemporary plans of Rome of the time of Nero or of the battle of Hastings. And how much more for a contemporary map of Jerusalem and its surrounding country, before the destruction of the Holy City by Titus!

So much by way of apology for the appearance of an article on the British National Survey in a journal devoted to Archaeology. But perhaps one thing more remains to be said. Modern maps of the best class are able to show, with great clearness and accuracy, the features, both natural and artificial, of the country that they portray. It is,

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therefore, a duty that we owe to posterity to leave behind us a reliable, graphic, description of the world as we find it, during our brief occupation of our temporary inheritance. The information will be of value and interest to our successors in that inheritance.

Space does not admit of an account of the general development of the cartography of the British Isles, and we may not describe the maps of Ptolemy, or of Matthew Paris, or the truly remarkable fourteenth century map of Great Britain which is in the Bodleian Library at Oxford. Nor can we discuss the appearance of these islands in the Portolan Charts, or in the little known map of 1534, or in Lily's of 1546, or in Mercator's of 1564. But, perhaps, a word should be said about Christopher Saxton's Atlas of England and Wales, for Saxton is an honoured predecessor of the Ordnance Survey. He was the first of the moderns to make a new and personally executed survey to form the basis of his maps. He worked under official permission and encouragement, being provided with an 'open letter' to Justices of the Peace, Mayors and others, who were directed to assist him in the accomplishment of the service upon which he was engaged. He published in 1583 a large scale map of England and Wales, about 8 miles to the inch, engraved on twenty sheets, of which no copy was known until quite recently. The late Sir George Fordham, in his account¹ of Saxton, said that 'no original impression is now known' but it is worth while to record that in October 1930 a copy was in the possession of Mr Francis Edwards (catalogue 530, no. 105).² Saxton's county maps, on a large scale for those days, remained for two hundred years the original source of other published maps of the counties. He completed his great work of surveying England and Wales between the years 1570 and 1579. If we take his map of 'Southamptonia' as an example, we shall find this engraved and printed on one sheet; the scale being about 3 miles to the inch, and the mile about 2000 yards long. But this matter of the varying length of the Old English Mile is another story, and so we take leave of Christopher Saxton, the semi-official forerunner of the Ordnance Survey.

A more directly official predecessor is Sir William Petty, who originated and carried out the 'Down Survey' of Ireland, between the

¹ *Christopher Saxton of Dunningley*. Reprinted from the Thoresby Society's *Miscellanea*, vol. XXVIII. Leeds: John Whitehead and Sons, 1928.

² Formerly at Docking Hall, Norfolk, and now in the British Museum. See *British Museum Quarterly*, March 1931, pp. 118-19.—EDITOR.

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years 1655 and 1659—they certainly worked well in those days. This celebrated survey was undertaken to facilitate the 'settlement' by the Cromwellian Government of the English soldiers and 'adventurers' who were to take the place of the dispossessed Irish. It is curious to note that the first systematic plantation was carried out by Queen Mary, in Leix and Offaly; so that we must not place the blame of, what is to us nowadays, an inhuman operation, upon religious fervour alone. The 'Down Survey', which was to enable the distribution of lands to be carried out, was a consequence of an Act of 1653, passed under the Commonwealth, and entitled 'An Act for the Satisfaction of the Adventurers for Lands in Ireland, and of the Arrears due to the Soldiery there, and of other publique Debts'. Mr Worsley and Doctor William Petty were put jointly in charge of the work, and were directed to take all necessary steps for the 'exact and perfect survey and admeasurement of all and every the honors, baronies, castles, manors, lands, tenements, and hereditaments forfeited'. Doctor Petty soon got rid of Worsley, whose methods were certainly not as sound as his own. He was then given a contract for the whole work and made a fine fortune out of it, as he deserved. The parish maps were on scales of 6.4, or 3.2, inches to the mile; and the barony maps on the scale, for the most part, of 1.6 inches to the mile. By the close of 1659 Petty had surveyed some five million acres in twenty-nine counties, a wonderful feat. Those who desire to study in detail the circumstances of this remarkable operation, may be well advised to read the interesting and elaborate study of Mr Y. M. Goblet,² a book which is the last word on the subject.

From Saxton in the sixteenth century, and Petty in the seventeenth, there is nothing of importance to describe in the way of the official mapping of the British Isles, until we come to the middle of the eighteenth century—and the work of General William Roy.

After the battle of Culloden, which was fought on a misty day in April 1746, the Quarter-Master-General, Lieut.-General Watson, who had evidently experienced the need of reliable maps during the operations—a need which could not then be satisfied—determined to make a map of the Highlands. This map was begun in 1747, and it is from this date that the Ordnance Survey is sometimes supposed to have come into existence, although, as a fact, the official foundation of the

² *La Transformation de la géographie politique de l'Irlande au XVII^e siècle.* Paris: Berger-Levrault, 2 vols. 1930.

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department did not take place until forty-four years later. But the map ordered by General Watson is in the strict historical succession of official maps, and did lead, indirectly, to the creation of the National Survey.

General Roy,⁴ writing in 1785, says, with reference to General Watson, 'This officer, being himself an Engineer, active and indefatigable, a zealous promoter of every useful undertaking, and the warm and steady friend of the industrious, first conceived the idea of making a map of the Highlands. As Assistant-Quarter-Master, it fell to my lot to begin, and afterwards to have a considerable share in, the execution of that map; which being undertaken under the auspices of the Duke of Cumberland, and meant at first to be confined to the Highlands only, was nevertheless at last extended to the Lowlands; and thus made general in what related to the mainland of Scotland. Although this work, which is still in manuscript, and in an unfinished state, possessed considerable merit, and perfectly answered the purpose for which it was originally intended; yet having been carried out with instruments of the common, or even inferior kind, and the sum allowed for it being inadequate to the execution of so great a design in the best manner, it is rather to be considered as a magnificent military sketch, than a very accurate map of a country'. He goes on to say that the breaking out of the Seven Years' War in 1755 put a stop to the final completion and improvement of the map.

The original field sheets of Watson's map are in the British Museum so far as concerns that part of Scotland which is north of the Forth and the Clyde. It is a compass sketch, uncontrolled by any more rigid framework, and is, in its method of execution, inferior to the work of William Petty of a century earlier. The 'fair protraction' of the map is also in the British Museum, and this covers the whole of Scotland except the islands. The scale is one thousand yards to one inch. It constitutes a valuable record of the surface utilization of Scotland as it was nearly two hundred years ago.

Now a word about William Roy himself. He was born in Carluke parish, Lanarkshire, in 1726, and was educated at Carluke and at Lanark. In 1747 he seems to have held a minor position in the Post Office at Edinburgh. In that year he was first employed by Watson on the map of the Highlands. Sir George Macdonald thinks that he

⁴ General Roy, 'Account of the Measurement of a Base on Hounslow Heath'. *Philosophical Transactions of the Royal Society*, 1785.

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was not in the army at all whilst he was on this work. He became a Practitioner Engineer in the army in 1755, and received a commission in the 53rd Foot in 1756. This regiment was re-numbered the 51st in 1757.⁵ We need not pursue his various ranks in the service, beyond remarking that he was made a Major-General in 1781. He fought at Minden in 1759 and made a plan of the battlefield showing the positions of the troops. The plan is preserved in the British Museum. In 1765 he was appointed, by Royal Warrant, Surveyor-General of Coasts and Engineer for making Military Surveys in Great Britain, in addition to his appointment as D.Q.M.G. But Roy is not only known as a soldier and military surveyor. He has a special niche of his own as an antiquary. Even as early as the days of the making of the Highland map, he appears to have been interested in the study of the past; for, towards the end of his life, he writes that 'though at that early period, the study of Antiquity was but little the object of the young people employed in that service, yet it was not wholly neglected'. And we may say that throughout his life this study was only second in his affections to his immediate military duties. His great work, *The Military Antiquities of the Romans in North Britain*, was left in manuscript at the time of his death, and was published in a splendid folio, in 1793, by the Society of Antiquaries. An admirable study of Roy and his *Military Antiquities* was also written by Sir George Macdonald, and printed by the Society.⁶

From the time of the breaking out of the war in 1755, and the consequent cessation of work upon the map of Scotland, Roy never forgot his intention of pressing for the execution of a reliable map of the whole of Great Britain, and his appointment as Engineer for making Military Surveys gave him the opportunity of putting forward his views in high quarters. He says that 'on the conclusion of the peace of 1763 it came for the first time under the consideration of Government to make a general survey of the whole island at public cost'. But the outbreak of war with the American Colonies again made it necessary to put aside, for the time, the consideration of this scheme, and it was not until after the peace of 1783 that the matter could be dealt with. Meanwhile, immediately after the peace, Roy, for his 'own private amusement' measured a base across the

⁵ Col. H. C. Wylly, *History of the King's Own Yorkshire Light Infantry*, 1, 10.

⁶ General William Roy and his *Military Antiquities of the Romans in North Britain*. *Archaeologia*, 1917, LXVIII, 161-228.

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fields between 'the Jew's Harp near Marybone and Black Lane near Pancras, as a foundation for a series of triangles—for determining the most remarkable steeples and other places in and about the Capital'.

It was in 1783 that the first step was taken towards the accurate mapping of this country, but the step was not a very direct one, and on the face of it, was a step more in the direction of pure scientific investigation than such a practical thing as a survey. But the two things are much intermixed, and one helps the other. The matter arose in this way. The third Cassini, Director of the Royal Observatory at Paris, wrote a '*mémoire*', which was transmitted by the French to the British Government, and referred by the latter to the Royal Society. The *mémoire* was not very tactfully worded, but the gist of it was that the French desired the execution of a trigonometrical connexion between Greenwich Observatory and that at Paris. The time was opportune; the war was over; we were on reasonably good terms with the French; and the object proposed had the goodwill of scientific men on both sides of the Channel. And there was a man ready at hand to do the work. George III himself took an interest in the operation, of which the execution was, of course, confided to Roy, then a man of fifty-seven. The King seems to have paid for the instruments. After discussion between Banks the President of the Royal Society, Ramsden the instrument maker, Roy, and Maskelyne the Astronomer Royal, a great three-foot theodolite, the Father of all accurate theodolites, was ordered from Ramsden—and in his usual dilatory way, he took three years to make it. It was finished in 1787 and remained in use until 1853.

The measurement of the Base on Hounslow Heath, in 1784, has been often described. It was 27,404.0 feet long, and, when re-measured in 1791, the new value agreed within four inches. The terminal points of this base still exist, and are marked by guns buried vertically, muzzle upward. These terminals were specially fenced in and inscriptions affixed, a few years ago, to celebrate the two-hundredth anniversary of Roy's birth. At the original measurement George III honoured the operation by his presence 'for the space of two hours, entering very minutely into the work of conducting it, which met with his gracious approbation'. And the respectable and very worthy President of the Royal Society, Sir Joseph Banks, during the final stages, ordered his tents to be pitched near at hand, where his guests and other visitors 'met with the most hospitable supply of every necessary, and even elegant refreshment'.

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During the next few years Roy and his assistants, much delayed by Ramsden, went on with the triangulation which was to connect England and France, and finished it in 1788. The English and French values agreed as regards lengths within about one part in twenty-thousand—a good result for those days. Throughout it all Roy always bore in mind his ultimate object of making a reliable map of Great Britain, and in his last paper, which he wrote just before his death, he recommends that the operation should be extended over the whole island—'The honour of the nation is concerned in having at least as good a map of this as there is of any other country'. Roy died in Argyll street, London, in July 1790. He has always been looked upon as the true founder of the Ordnance Survey. The official establishment of the department was the next step to be taken. This step we owe entirely to the third Duke of Richmond, Master General of the Ordnance. He was well acquainted with Roy and his work and had helped the early operation by lending men and stores from the Board of Ordnance. The course of events was something like this: the Duke had every wish to continue the Survey and probably had in mind the military value of a reliable map of the southern counties, for we were on the verge of war with France; the Royal Society, having seen the completion of the junction of the two observatories, were not unwilling to be relieved of further responsibility. On 12 July 1791 the Ordnance Survey was founded by order of the Master General and Board of Ordnance. But it was not as yet known by that title.

An unhappy selection was made for the first Director. One who served under him said that he never made an observation, nor did a calculation, nor wrote a line of any of the printed accounts; he frequently retarded the progress of the work; 'and the only time he benefited the service was when he took his departure to the next world'. But, most fortunately, he had an admirable assistant, Lieut. William Mudge, of the Royal Artillery. Mudge was appointed on the formation of the Survey, became Director in 1798, and remained in that post until his death in 1820. In view of the first Director's incapacity, we may reasonably suppose that Mudge had effective control of the work from the time of his first appointment, that is, for a period of twenty-nine years. The Survey owes much to him. He had many difficulties to contend with: shortness of funds; sometimes an unsympathetic Board of Ordnance after the departure of the Duke of Richmond; and a military enquiry which he much resented. But he weathered all the storms.

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The main work was the construction of a map of Great Britain on the scale of one inch to one mile. This was based on the triangulation; and the detail, in those early days, was carried out in the field by compass and pacing, or cyclometer, on the field scale of two inches to a mile. The first Ordnance Map, that is the first map issued by the Ordnance Survey for the use of the public, was the map of Kent published on 1 January 1801—appropriately on the first day of the nineteenth century. These are by far the finest maps of this country that had hitherto appeared; well engraved, clear and accurate. At that date they were, one may say, the finest maps in the world, although the hachures look to us, now, a little primitive. The two-inch sheets from which the one-inch were engraved, are valuable sources of information as to the appearance of the country at the date of their execution; they sometimes give archaeological information which would otherwise be lost. The published one-inch sheets were of course, printed in black from the copper plate, and there are those who regret the discontinuance by the Ordnance Survey of this, the oldest method of printing maps. These maps were artistic in their way, easy to read where there is not much detail, and printed on good paper that is likely to last. The use of colour killed the old black engraved map; the use of colour, that is, combined with the printing from stone or zinc. There was an intermediate stage during which the detail was 'transferred' from the copper to stone or zinc, but this has now been rightly given up, and the one-inch maps are no longer engraved on copper, but are drawn for reproduction in colour, from zinc plates. The change took many years to accomplish, but was clearly inevitable. The coloured maps are much easier to read, especially when they represent complicated country with much detail; the public showed that it did not want the old type of map, by simply not buying it; the Army had long shown a preference for coloured maps; and the increasing use of maps, both by the public, and by officials, necessitated the issue of large editions which the slow-printing copper-plate press could not cope with.

We need not enter further into the history of the one-inch maps of these islands. Modern maps will not last as well as the old maps; the paper is not so durable, and the colours will fade. Our antiquarian successors may bewail the change to colour; but, after all, maps are made chiefly for the use of this generation. It would however be reasonable to print, on specially durable paper, and to take special precautions for the custody in air-tight and light-tight cases, of

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record copies, to be stored in the British Museum and at the Ordnance Survey.

The next notable stage in the history of the Survey was due to the action of the House of Commons, which, in 1824, resolved, 'that it is expedient, for the purpose of apportioning more equally the local burthens of Ireland, to provide for a general Survey and Valuation of that part of the United Kingdom'. A Select Committee was appointed which expressed the opinion that the 'execution of the Survey cannot be placed in better hands than in those of the Ordnance Officers', and went on to say that the work should be carried out much more rapidly than the Trigonometrical Survey of England. The scale decided upon by the Committee was six inches to the English mile. And so the six-inch scale came into existence. Major Thomas Colby was then Director of the Survey. He had succeeded Mudge in 1820, and he remained in that position until 1847, when he retired, being then a Major-General. He writes, 'When the House of Commons ordered a Survey of Ireland on a scale of six inches to one mile, His Grace [the Duke of Wellington] confided to me the direction of that Survey. The entire Survey of a large country, with the minutiae of detail and accuracy required for a valuation of land, had no precedent of any similar work to guide its arrangements. I, therefore, devised new methods which I proposed for His Grace's sanction'.

The work began in 1825, with the commencement of the great triangulation of Ireland. Rays were observed with a three-foot theodolite from the tops of the mountains; the longest ray in Ireland being that from Cuilcagh to Keeper, 102 miles long. Three rays cover the length of the country from north to south. Two rays are sufficient to cross Ireland from the Irish Sea to the Atlantic. The observations of such long rays was rendered possible by Lieut. Drummond's invention of the limelight. This officer became better known ten years later, when he was appointed Under-Secretary for Ireland and virtual ruler of the country.

This is not the place to describe the technical methods employed; or how that experienced soldier and geologist, Portlock, executed, almost unaided, the great triangulation; or how Colby and his assistants measured the celebrated base on the shores of Lough Foyle; or how anxiously they waited through the mist for a sight on distant hills of Drummond's light; or how a committee of enquiry was appointed—for Colby had very similar troubles to those of Mudge. Colby overcame all his difficulties; his name ranks with that of Roy as a founder of

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the Survey, and before he retired he had the satisfaction of seeing the completion of the original six-inch survey of the whole of Ireland, an undertaking quite unprecedented in those days. These six-inch sheets were admirably engraved, and modern six-inch sheets look a little less finely executed in comparison, for the modern sheets are drawn and printed from zinc; the expense and slowness of the engraving made the change absolutely imperative.

It was now the turn of Scotland, for which nothing official had been done since the making of the sketch map of 1747-55. Various bodies in Scotland petitioned the Government, and the upshot was that a six-inch survey of Scotland—and of the six northern counties of England—was approved and work was begun on it in 1838. But we need not spend any time in discussing this, for the methods were, in all important particulars, the same as those used in Ireland.

For the next quarter of a century there was much discussion, both in and out of Parliament as to the best scales for the national large-scale maps, and it was not until 1863 that, following on a recommendation of a Select Committee, a Government decision was come to, by which the scale of six inches to one mile, and also the scale of 1 : 2500, or about twentyfive inches to one mile, were adopted. There were also some larger town scales which need not detain us; they have no present-day importance. The experience of two generations has proved the soundness of the decision made in 1863. For land and estate work the twentyfive-inch plans are very convenient—it should perhaps be said that, for simplicity, the maps on the scale of 1 : 2500, which may be expressed as 25.344 inches to a mile, are usually referred to as the twentyfive-inch maps. Sheets on this scale cover the whole of Great Britain, except waste and mountainous regions. There are more than fifty thousand of them. No country in the world is so well provided with large scale maps. As to the six-inch, they are contoured and are indispensable for all engineering and a host of other purposes. For Great Britain there are about 15,000 of these sheets.

It may be asked, if, as is undoubtedly the case, the maps of the British Isles are finished for all these scales, why is there any longer any need for an Ordnance Survey? The answer to such an enquiry would be the following: the face of the country changes rapidly; towns grow in size; new roads and new railways are built; woods are cut down or planted; boundaries are constantly being changed; the coast line alters. A map of a well-developed area soon becomes out of date, and the old maps soon lose their practical value. It is, therefore,

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necessary that all sheets, on all scales, should be periodically revised. Then, from time to time, the Government needs special maps for special purposes ; as instances there are those required for the Electoral Redistribution or for Land Valuation, or for Military Manœuvres, or for the thousand and one functions of government. The Public has its special needs, which vary with the times : transport maps ; local government maps ; tourist maps ; archaeological maps. Then there are matters not directly connected with mapping, such as the Magnetic Survey, which is carried on continuously and enables mining engineers to use the latest values of that mysteriously changing phenomenon the magnetic variation ; and so on.

And now for a few words about the special relations between the Ordnance Survey and Archaeology. Ordnance Maps on their various scales do represent, with great fidelity, the visible features of the face of the British Isles. On the Irish maps will be seen the thousands of those ancient circular earthworks known erroneously, as ' Danes Forts '. Every visible one is there, each in its proper place, accurately drawn. And most interesting it is to study some of the sheets showing these many primitive fortifications. Similarly, in England, will be found marked the much larger, and more striking, but fewer, earthworks of the Early Iron Age, and some few of the earlier earthworks—all that are clearly visible will be shown. The same remarks will apply to the long barrows. But here, the aid of skilled archaeology is needed. There are mounds of doubtful ascription ; some are hardly recognizable, worn away by the action of time, or of mankind. There are other ancient earthworks that need a skilled eye for identification. There are customary descriptions which need to be changed, such as Druids' Altars. There are Roman roads difficult to trace. There are round barrows, barely visible, which the Ordnance Surveyor may mistake for natural features. And there are those traces of an ancient past, seen as it were, through a veil, dimly, from the air, to be reconstructed on our maps, although the earth-walker may not realize them. The task is clearly beyond the powers of the ordinary surveyor, who could never decide such matters, and must leave them to a higher authority. Such an authority was appointed to the staff of the Ordnance Survey some ten years ago, and the advantage of this appointment became immediately apparent. Order in archaeological matters is being introduced on our national maps. Priceless information is being preserved. All over the country a veritable archaeological survey is in progress, with the good will and help of experts in the

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counties. Archaeological history-sheets are being kept of each portion of the surface of Great Britain, in the form of six-inch maps, with all verifiable information marked upon them, namely, the results of excavations ; the casual ' finds ' ; information from literary sources, such as the Saxon charters ; information from air photographs ; historical sites ; and everything recordable upon the maps, that may serve to throw light upon the past.

Another form of activity, initiated by the same authority, is the publication of a Map of Roman Britain ; maps of other periods are in preparation. Another illustration of the same wide outlook is the cooperation of the Ordnance Survey with the Surveys of most of the nations of Europe, in the preparation of a series of maps, of a uniform type, of the Roman Empire at the time of its greatest extension. All this will serve to illustrate the fact that if, as is the case, the Founder of the Survey, old Roy, put the study of archaeology high in the range of his interests and devotions, that science has, in recent years, fully come into possession of its rightful domain, as an integral part of the operations of that same Survey. And this is, under the benevolent control of successive Directors of the Survey, largely due to the energy and ability of the aforementioned authority, whose name the Editor of this Journal might not, perhaps, permit me to mention.

The Chiltern Grim's Ditches

by O. G. S. CRAWFORD

QUITE a long time ago the Editor received an article on certain linear earthworks in Oxfordshire and Buckinghamshire. The author, Mr M. W. Hughes, developed a reasoned hypothesis to account for the facts, basing his argument on the assumption that the course of the ditches marked on the Ordnance Maps was as correct and complete as possible. It seemed desirable, however, to test this in the field, and the Editor therefore applied to the Archaeology Officer of the Ordnance Survey, with very satisfactory results. The course of each ditch was followed on foot, and its characteristic features recorded on the 6-inch map. The investigation thus initiated was carried on until nearly all the Grim's ditches of Wessex, and some others as well, had been traced. The information thus obtained proved to be of considerable value; many miles of new entrenchment were discovered, and these will be incorporated on the new (5th) edition of the one-inch Ordnance Map now being prepared, and will also appear in due course on the Ordnance Map of Anglo-Saxon Britain, now in preparation. It also became evident that the name Grim was attached to at least two quite distinct types of entrenchment. The date of each can, as a rule, only be determined by means of excavation; some of these examined are probably prehistoric; others fall probably within the extreme limits of the years A.D. 350-700. Those dealt with in the present article are almost certainly either late Roman or Saxon. It is not, however, the object of this article to discuss their age or purpose; that is done by Mr Hughes in the article we shall publish in our next number. What is now designed is to give a straightforward account of the existing remains of the entrenchments dealt with by Mr Hughes, so as to clear the ground and make his hypothesis more easily intelligible.

It may be said at once that field-work failed to add any appreciable amount to the course of the Oxfordshire and Chiltern ditches; in fact it had the opposite effect. For five miles of the South Oxfordshire ditch proved to be imaginary!

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Of those dealt with here, the first is included for completeness, although it is not mentioned in Mr Hughes's paper.

The ditches are as follows :—

1. The Aldworth Grim's ditch and the detached portions which presumably belong to the same system.
2. The Mongewell (or South Oxfordshire) Grim's ditch.
3. The Chiltern Grim's ditch, probably once continuous but now found in four stretches with gaps between them :—
 - (a) near Hampden
 - (b) running eastwards and northwards up from the Missenden Valley to the Lee
 - (c) from King's Ash, north of the Lee, in a curve through the parish of Wigginton, to a point west of Berkhamstead
 - (d) on Berkhamstead Common.

1. THE ALDWORTH GRIM'S DITCH

(Berks 27 NE, 28 NW)

This ditch, or rather system of ditches, faces north ; that is to say the ditch is on the north side of the bank throughout. (All the others face southwest, south or east). Beginning at the west end the first certain trace is to be found in a field 300 yards south of Woodrows Farm. It runs through Beche Farm where it is well preserved. It makes a right angle bend northwards in Foxborough Copse and throws off a branch southwards at the point where it crosses the ridgeway coming from Hungerford Green. This branch, which I discovered accidentally, is not on the map ; it runs for a little more than half a mile, ending in Beechcroft Shaw. It is to be seen along the southwestern margin of Portobello Wood and in the field immediately south of it, in which it makes a right angle bend northeastwards. The main line likewise comes to an end 300 yards to the NW, in an old hollow lane, near the head of a steep-sided valley running down to the Thames. Whether either branch originally continued must remain uncertain ; there are at present no traces of any such continuation visible on the ground. The estimated vertical height of both branches (from west of bank to bottom of ditch)¹ nowhere exceeds 6 feet.

¹ Usually abbreviated as the ' *cd* vertical ', a term invented by Dr Williams Freeman ; see his *Field Archaeology of Hampshire*, pp. 329-333. *oh*=Overall horizontal width.

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Southwards, on Hart Ridge², is a detached fragment in Broom Wood and Bowler's Copse. The portion in Broom Wood is indicated as a bank by hachures but is not described by any name on the Ordnance Map, and has not hitherto been recognized as an antiquity. The western portion runs NE by E for 300 yards; it is in an excellent state of preservation, and has a CD vertical height of no less than 12 feet, and an overall width of 65 feet.³ At each end this imposing rampart makes an abrupt turn and dwindles to the normal altitude of 5 feet. At the west end a stretch runs NW along the SW margin of Bowler's Copse and out into the field beyond, in the middle of which it is lost. (This portion has an overall width of 42 feet). It looks as if it continued to the main entrenchments a mile to the north, but I could find no trace of it over the intervening country. At the east end the big rampart and ditch are suddenly discontinued, and the gap so formed seemed to both Dr Williams Freeman and myself to be original. As in the Chiltern ditch near Hampden the gap occurs at an angle in the ditch, and it seems reasonable to suppose that it was left to allow for the passage of a road through the entrenchment.

The third and last unconnected portion consists of half a mile from the Thames westwards, in which direction it is best to describe its course. It is first seen going up the very steep slope above the Streatley and Reading main road opposite Grotto Lodge. (The line is continued to the Thames itself by a field-boundary, but Grim's ditch, if it persisted, is not now to be seen). It climbs 100 feet in 100 yards, and then turns and follows the top of a narrow ridge, forming the southern border of High Holies Wood. It then makes a slight turn and obliquely descends the southward-facing slope, falling 100 feet in 400 yards. Here at the bottom of a big valley it seems to end. This last sector is remarkable in that the ditch faces *up* a slope of 1 in 4 and cannot possibly have served any defensive purpose.

A glance at the accompanying map will show the relation of these entrenchments to certain ancient lines of communication. The western portions are all three of them drawn across the line of a ridgeway which continues that of the well-known Berkshire ridgeway; and it

² Probably connected with the *hiorotlege* of the Bestlesforda (Basildon) bounds, circa A.D. 890; see Birch, *Cart. Sax.* II, 565, and Grundy, *Berks, Bucks and Oxon Arch. Journ.* XXIX, 203-6.

³ These and the other measurements quoted here were made by Dr Williams Freeman, with whom these investigations were carried out during the spring of 1930.

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seems not at all unlikely that the gap in Broom Wood may have been left for the traffic along it. So too the ramparts of the main entrenchment are duplicated where it crosses the line of the same road in Portobello Wood. Now this ridgeway has suffered severely at the hands of antiquaries of the last two centuries, who have thrust their theories upon even the Ordnance Maps, which they should not have done. Upon these maps the ridgeway is made to leave the downs at Streatley Warren, and to pass thence over the side of Thurle Down to the bottom of a *valley* which it follows for over a mile, ending meaninglessly at the Reading road, half a mile from the Thames and nowhere near a ford. This is all wrong, and the true course is perfectly plain. It keeps to the comb of the ridge all the way from Hungerford Green near Aldworth, past Upper Basildon, to Pangbourne where it crosses the Thames and becomes the Chiltern ridgeway.

The so-called West Ridgeway is another such figment invented in the 18th century. There are two outlying portions of the parish of Streatley called West Ridge and South Ridge, lying respectively west and south of the village. The road leading from Streatley to Westridge was called Westridge Way, and is so printed on old maps. The name has no other significance. There was no such thing as an independent 'West Ridgeway'.

The last, eastern, portion of Grim's Dyke bestrides the road which led from Dorchester (Oxon) to Reading. There can be little doubt that at this point the modern road coincides with the Roman road from Dorchester (Oxon) to Silchester; northwards the course is quite plain, but south of this point it is lost. It seems reasonable to conjecture that just as in Saxon times Reading came to replace Silchester, so the traffic and with it the road was diverted eastwards until the southward continuation fell into disuse and at last completely disappeared.

That these above-mentioned ditches were to some extent intended for military defence may readily be admitted; but this explanation breaks down completely in the face of such facts as we encounter in Holies Shaw. Here Grim's Ditch, after maintaining an admirable course up and then along the crest of a sharp ridge, commits tactical suicide by deliberately leaving a steep slope and descending obliquely to the bottom of a valley. It must have been done with intention, for any one of several alternative courses might equally well have been selected. The purpose however completely baffles me at any rate.

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2. THE MONGEWELL (OR SOUTH OXFORDSHIRE) GRIM'S DITCH

(Oxon 49 SE, 50 SW, 53 NW)

Although this and the succeeding ditches are dealt with separately here, it is not improbable that some at least of the component parts were originally connected by stretches time has destroyed. There is no evidence one way or the other; the intervening gaps have been searched but without result. It is in any case highly probable that the now disparate sectors all belonged to a single system. It is with this and the succeeding Chiltern Grim's ditch that Mr Hughes will deal in his forthcoming paper. I do not wish to anticipate his conclusions further than to state that he argues in favour of an early Saxon origin and construction.

The Mongewell intrenchment faces southwards. It begins, I think, not in the Thames itself, as is generally supposed, but at a large spring-pond in Mongewell called 'the Lake' at a point 600 yards east of the Thames.⁴ This forms an excellent obstacle upon which to rest the right flank. Thence it runs in a direction slightly south of east and in an almost dead straight line for 3½ miles to Nuffield on the top of the Chiltern ridge, 670 feet above O.D. For most of this stretch little but the bank has survived; both ditch and bank are, however, well preserved in the woods west of Nuffield. Here, at the head of a coomb, it bends sharply to the southwards for a furlong, then resumes its easterly direction for 500 yards, and then runs NE for the same distance; after which remarkable behaviour⁵ it continues approximately in its former, east-southeasterly direction for a little over half a mile to Hayden Farm where it vanishes completely and does not reappear. I have walked over every yard of this last portion, from Nuffield to Henley, and have searched for it both along the course assigned to it on the Ordnance Map and in other likely places, but without finding any trace or hint of it. Dr Williams Freeman was equally unsuccessful. At present one can only conclude that it never went beyond Hayden Farm. It should be observed that Dr Plot,

⁴ This is really Dr Williams Freeman's discovery.

⁵ It is to be observed that this small almost rectangular salient occurs at precisely the point where the ditch is crossed by the Chiltern ridgeway; see map. This can hardly be accidental.

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the first to describe it, did not see it himself east of Nuffield, nor does he mark it at all beyond this point on his map. He merely states that *he was told* it continued further.*

Though not what we want for the moment, the motley assortment of banks and ditches which some enthusiast has foisted upon the Ordnance Survey (53 NE) is by no means without points of interest. Across Highmoor Common runs Highmoor Trench, a pair of parallel banks 18 feet apart and quite evidently the remnants of an important highway of traffic. An examination of the large scale map makes it seem probable that this road was a continuation of an old road from London to Wallingford, whose course west of Marlow can be followed pretty easily on the map. At Fawley Court Farm it left the modern road, and crossing Henley Park descended in a deep hollow cutting to Lower Assendon, proceeding by the name of Bix Lane to Bix where it crossed the modern Henley-Wallingford road,⁷ and thence to Highmoor Trench and Deadman's Lane. It was probably continuous with Howberry Lane which went over Nuffield Hill and down Brixton Hill to Wallingford.

The course outlined above was suggested solely by a study of the 6-inch Ordnance Map; it is often possible, from the detail of lanes and hedges here shown to infer the course of roads of no very great antiquity. In this instance the course outlined above was confirmed by a subsequent study of old maps of the district. Although doubtless still in use at a much later date over parts of its course, it seems quite probable that this may have been one of the oldest western highways out of London. It would be interesting to know whether it was in

* His actual words are :—' This *Vallum* or ridged Bank, now called *Grimes-dike*, . . . yet remains very high, but is but single till it comes to the Woods near *Tuffield*, alias *Nuffield*, where it appears double with a deep *trench* between '. Is this the record of his own observation or (as I should rather imagine) an inference from the name Highmoor Trench and from what he was told? He never saw it east of Nuffield for he says: ' From *Tuffield*, I was told, it held on its course through the thick Woods, and passed the *River* below *Henly* into *Berk-shire* again, but the Woods scarce admitting a *foot* passage, much less for a *Horse*, I could not conveniently trace it any further '. *The Natural History of Oxfordshire*, by Robert Plot, 1677, p. 317.

⁷ Which cuts through all boundaries and is for most of its course of quite recent origin. It had not yet assumed its present form when the first Ordnance Map was made in 1809.

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use as a London and Wallingford road before Maidenhead Bridge, already built in 1297, was constructed.*

Whether the Mongewell ditch continued to Henley or not, it is certain, from documentary evidence to be cited by Mr Hughes, that a Grim's ditch existed there, though it has now completely disappeared.

The western portion of the Mongewell ditch is called Grimes ditch in 1220-1 in a bequest to Reading Abbey of land in Newnham Murren;† and on Davis's Map of Oxfordshire (Cary, 1797) it is called 'Grimes or Devil's Ditch'.

3. THE CHILTERN GRIM'S DITCH¹⁰

(a) near Hampden.

The first traces of this ditch are met with in Park Wood, on the high ground between West Wycombe and Lacey Green. It is quite well preserved in places and follows the line of the road most of the way to Lacey Green. It can easily be traced almost continuously through the enclosures and gardens there. Then, after a straight run of a mile and a half it turns and runs, again in an almost straight line, for just short of 2 miles, to the north corner of Hampden Park. Except for a break of 800 yards, where it has been used as a lane, it can be traced without a break over hill and dale. At the aforesaid corner is what looks like an original gap, with deeply scored traffic ruts.¹¹ At this point it makes the most remarkable change of direction anywhere observed, turning through slightly more than 90 degrees. It is at

* The construction of bridges, particularly those of Abingdon, Wallingford, Henley and Maidenhead, must have had great influence upon the course of main roads, and would form an admirable subject for enquiry. We know that the construction of Abingdon bridge in 1416 diverted the traffic to it from Wallingford where previously the London and Gloucester road had crossed the Thames. This must have diverted the Gloucester traffic to the Benson-Dorchester section of the Henley-Oxford road, thence to Abingdon by Burcot and Culham. The course of the old Gloucester road w of Wallingford is unknown. The building of the Seven Bridges road had great influence upon the roads into Oxford from the west. For Maidenhead, Wallingford and Abingdon bridges see Lysons, *Berks.*, pp. 268, 9; *Berks, Bucks and Oxon Journal*, April, 1907, xiii, 23-26 ('The Early History of Maidenhead Bridge', by E. H. Young); Gough's *Camden*.

† Brit. Mus. Index to Charter Rolls, 1900, p. 314 [ADD. MS. 19615].

¹⁰ Mr W. J. Hemp, F.S.A., who first observed this gap, also regards it as original.

¹¹ The Bucks Grim's ditch is described in Clutterbuck's *History of Herts.*, p. 8, note 1, by the Rev. Thos. Leman, a good observer, who traced it in 1795.

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first perfectly preserved, and can be followed without difficulty to Hampden House, between which and the church a garden path runs upon its bank. It is continued on the northeast side of the drive where a row of trees stands upon the site of the bank; the ditch (full of leaves when I saw it) is just visible, but may have been slightly modernized. Beyond the Lodge the bank again becomes visible for about 170 yards, then comes a break of about the same length, and then it reappears for about a furlong in Oaken Grove. Here two large mounds stand right upon its line. Dr Williams Freeman and I tried, by looking at them, to detect some clue to the relative ages of ditch and mounds, but we could see nothing. Other archaeologists have tried with no better results. Excavation would doubtless settle the matter, though excavation in a wood will not commend itself to the experienced digger. The mounds themselves may be prehistoric, Roman or Saxon; there is nothing in their external appearance to suggest which, though I do not think they are prehistoric. Another mound standing by itself about half a mile to the west (called 'Danes Camp' on the Ordnance Map, Bucks 38 sw) is equally puzzling. Beyond the wood, southeast of the mounds, there is no trace of the ditch, though its line is continued by a footpath.

(b) running eastwards and northwards up from the Missenden Valley to the Lee.

Though it seems reasonable to suppose that this next sector was once continuous with the preceding, I have hunted the intervening country field by field in vain. The ditch is first seen in Woodlands Park, and it can be followed as it bends round northwards into the line of King's Lane. From the southern course of the lane to a point 300 yards further north on the east side it is quite plain; then, for no apparent reason, it disappears.

(c) From King's Ash in a curve through the parish of Wigginton to a point west of Berkhamstead. (Bucks 34 SE, 35 SW [Herts 32NW NE]).

The *line* is continued straight by King's Ash lane, which also forms the boundary between the parishes of Lee and Wendover; but there are no certain remains of Grim's ditch until we get to Great Widmoor Wood and Mercer's Wood (in the extreme NW corner of Bucks 38 NE) along whose western margin it runs, due north and south.

I did not follow it across sheet 34 SE where, as I am informed by Sir James Berry, its course is plain, even where it is not marked on

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the map. It runs at first northeastwards and then bends gradually round eastwards; finally it turns southeastwards in Harding's Wood, Wigginton (Herts 32 NE). I followed it between Hamberlin's Wood and Woodcock Hill in the parish of Northchurch. It may be followed almost continuously through fields and copses, though it has been destroyed in many places by modern diggings. The last certain signs I saw of it were between Woodcock Hill House and a small house called The Chalet.

(d) on Berkhamstead Common (Herts 33 NW).

Unless the name 'Graemes Dyke road' in the southern outskirts of Berkhamstead has any significance, there are no traces to connect the portion on Berkhamstead Common with the previous sector. The course would have passed through Berkhamstead Castle: and the whole of the ground hereabouts has been so long and so intensively cultivated that it would be remarkable if any remains had survived. It enters the common from the west at the 500 foot contour-line, and it may be traced for a short distance into the field beyond by a belt of large flints and an almost imperceptible fold in the ground. On the common it is well preserved. About half way across it turns from ENE to ESE, and is crossed immediately afterwards by the modern road from Berkhamstead to Northchurch. It becomes difficult to trace before it leaves the common, and though I fancied I could detect signs of it on the Green at Potten End and even a little beyond, I saw nothing indubitable, nor did a somewhat rapid survey from the air reveal any clues.

A good deal of time in the field was spent in a vain search for traces of Grim's ditch in the intervening gaps already indicated. That no such traces were found does not by any means disprove their existence; others, especially those with local knowledge and opportunities, may well succeed. Nor does it prove that the sectors which are now discontinuous were originally discontinuous. Some of them were, in my opinion, almost certainly connected.

Whether, on the other hand the Mongewell (or South Oxon) Grim's ditch was once continuous with, or even whether it belonged at all to, the Chiltern Grim's ditch is another matter. Personally I should be rather surprised if it did not at any rate form part of the same system. And in this connexion I must mention a most remarkable discovery that Dr Williams Freeman and I made, purely by accident. We were

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motoring along a lane at Park Corner, 2 miles NE of Nuffield (Oxon 50 SW) when we suddenly saw a large bank in a wood (Springalls Plantation). On consulting the map we found that close by was Digberry Farm, a name whose suffix had already aroused our suspicions. We stopped and examined it, and it proved to be a large almost square earthwork. Dr Williams Freeman's account is as follows:—

'The camp lies on the left hand side of the road going from Nettlebed to Cookley Green, which at this point forms part of the Chiltern ridge-way, and close to Digberry Farm. It lies on a level saddle between two Coombes on either side of the hills.

'It is of medium profile; CD. vert. 9 feet, OH. 53 feet, and contains some ten acres or so. It is of square form and is perfect only at the east end of the north side, the north end of the east side, for nearly the whole length of the south side, and a small portion of the west side at the southwest corner; but the southeast corner is quite plainly visible in the field on the east of the road and the northwest corner can easily be traced. At the northeast corner there is a heaped up bank on the counterscarp 3 feet high but with no recognizable ditch. The south end of the west side is pierced by an old disused road (Digberry Lane) going down to the low country, and from this point an annexe of approximately oval shape juts out and returns. This is much ploughed out and spread, the ditch is on the outside and the O.H. gives the impression that it must have been of much the same profile as the camp.

'The top of the bank is hard under foot and there is a large number of flints along it. There are several modern gaps in the bank but one on the eastern side looks as if it might be original—it is small and undefended.

'The soil is clay with flints and no chalk appears in the banks. The camp is in an open beech wood but part of the area is in grass—the natural condition would be scrub. The nearest springs would be a mile away at the foot of the hill. The lane was said by an old inhabitant to have been used by coaches within living memory and there are sayings about battles in old time.

'The camp is unrecorded and was noticed by Mr Crawford and myself from the road, the name Digberry Farm having suggested it'.

Several apparently significant facts are to be noted. First, it is placed exactly at the point where the Chiltern ridgeway crosses the old London coach-road. This fact might be inferred from the map, but I had already been told on the spot by a native that Digberry Lane

THE CHILTERN GRIM'S DITCHES

was supposed to be an old coach-road. Then, at this point the ridge itself is constricted to a narrow width by two valleys whose heads almost touch, having only a narrow space for the ridgeway. It is a 'nodal point' of traffic; and it is exactly where a fortified post connected with the Mongewell Grim's dyke would most suitably have been placed. There is already evidence of topographical association—no more as yet, but still even that is something—between large rectangular earthworks and linear earthworks, in the case of the Oxfordshire Grim's dyke (Callow Hill) and the Froxfield entrenchments (Ridgehanger). These two others *seem* to be Roman; but neither has been excavated, nor has Digberry. There may of course be no connexion between Digberry and Grim's ditch; but even so one would like, for their own sakes, to know something definite about one at least of these rare and by no means insignificant rectangular forts.

This concludes my account of the Grim's ditches, which are to be dealt with by Mr Hughes from another angle. I have to thank him for arousing my interest in what has proved to be a most fascinating pursuit. At the same time I investigated many others in the field—the Pinner or Middlesex Grim's ditch, which faces south; the earthworks round St. Albans which are being excavated by Dr Wheeler; and a line of bank near Goff's Oak in Hertfordshire which vanished into thin air.¹² I propose to continue until I have examined all the others which require investigation.

NOTE.—The accompanying map has been drawn mainly to illustrate Mr Hughes' article, though I am responsible for the selection of the items marked. It seemed better to publish it now rather than in the next number, so that the descriptions given above may be more easily followed. They are based on the 6-inch Ordnance Map.

¹² See Clutterbuck's *History of Herts*, II, 78.

Inka and pre-Inka

by J. LESLIE MITCHELL

FEW of the standard Peruvian histories—much less those politico-fantastic tracts which hasty study of the Ancient Peruvian scene has evoked in such number—give any adequate idea of the tremendous cultural background against which the Inka civilization was built up, or of the fact that from that background emerge those archaeological exceptions which constantly question the theories of modern Americanists.

For example, no pre-Columbian American had any knowledge of the true arch; but in an un-Inka portion of the ancient site of Pachacamac, near Lima, there was such an arch. The wheel was unknown in Ancient America; but at Tiawanako, remote in the Andean Sierra near Lake Titicaca and long ante-dating the Inkas in origin, are stone discs which were almost certainly used as wheels for the transport of gigantic building stones.¹ The Mayan glyphs apart, there was no true script in the two American continents at the time of the arrival of the Europeans; but the sculptured stones of Sahhuayacu bear recurring symbols which cannot well be identified as anything else but inscriptions.

The list is not by any means complete. But these exceptions remain exceptions. Neither the Pachacamac arch nor the Tiawanakon wheel occur elsewhere; the evidence for the authenticity of most so-called Peruvian inscriptions is negligible. Unexpected phenomena erupt upon the scene of much cultural activity, but bear no influence outside their own epoch or locality. Though the most recent, the semi-civilization of that confederation of tribes on whose territory Pizarro's Spaniards set foot in the year 1533 was not in every respect the highest in Peruvian attainment.

Yet, as the Aztecs succeeded in leaving their name posthumously superimposed on nearly everything Mexican and Central American, so in South America the unfortunate misnomer 'Inca' is still generally applied to both the survivors of the ancient populace and the ruins of the ancient cultures. So deep-rooted is the name that even the Americanist abandons the attempt to fit the Andean and littoral civilizations with a more correct terminology, though 'Inca', 'Sacsahuaman',

¹ A. H. Verrill, *Old Civilizations of the New World*, 1929.

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'Uiracocha', and the like euphonious familiars have given place to the clumsier if more correct 'Inka', 'Saksawaman', 'Wira-Kocha'.

Whatever the actual origin of its ancient inhabitants, South America is now peopled by three distinct theories. The first, and most generally accepted, brings tribes of proto-Mongolian stock across the Behring straits, through North America, and into Colombia by way of the Panama neck. The second, championed by Captain T. A. Joyce,² varies this first theory by deriving the wave of long-headed peoples—as distinguished from the later Mongoloid round-heads—from Europe by way of Greenland. The third hypothesis, much in favour with modern archaeologists who are themselves South Americans, finds overwhelming proofs of the continent having been settled by successive incursions of Melanesian and Polynesian immigrants.

The remains of the long-headed race or races form the lowest cultural stratum on the Peruvian coast. Shell-fish was their principal food. Maize-growing, and probably all forms of agriculture, were unknown. Weapons were made of shell and bone; the stone implements are definitely palaeoliths. It is improbable that these strayed Europeans or Melanesians flourished at a period remoter than 10,000 B.C., although one investigator considers the much more recent Tia-wanako ruins as 'about 10,500 years old'!³

So far as Peru is concerned the round-heads, Mongolian or Polynesian, appear to have made their first appearance in the region of the Andes. They evicted or exterminated the long-headed peoples and settled down to witness or originate those adventures in civilization with which this paper is concerned.

The North Pacific coastal strip of South America consisted and consists of flat and sandy desert, traversed from east to west by occasional rivers. Behind this was the Andean Sierra, some 250 miles in breadth and 1400 miles in length, a jumble of interlocking mountain chains interspersed by fertile valleys at considerable elevation. Still further to the east, beyond the Sierra, lay the Montana, the region of tropical forest drained by the Ucayli and other tributaries of the Amazon. Originating from one of these regions, or from all three, there arose in the first millennium before Christ a culture that, with the customary exceptions, appears to have been roughly homogeneous.

² *South American Archaeology*, 1912.

³ A. Posnansky, *Guía general ilustrada para la investigación de los monumentos prehistóricos de Tihuanacu, etc.*, 1912.

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This culture was characterized by an ability to work textiles with considerable skill and to produce pottery, plain and polychrome, ranging from utensils of the crudest technique to unutilitarian vessels of great beauty. It cultivated maize. In the Andes, at least, it had probably already domesticated the llama. It is doubtful if, in its early phase, it was acquainted with the use of metals. On the coast and in the coastal hinterland, at such sites as Parakas, Chawin, Aija, Wari, Supe, Changoyape, it built its temples and perhaps its dwelling-houses; in the Sierra megalithic stone buildings, the stone roughly cut but fitted with some skill, were reared. Both on the coastal strip and inland it excavated elaborate communal burial-places, erected great pyramidal structures, and carried on terrace-agriculture. Mummification was a practice in the coastal sites, but unknown inland until late in the epoch. Sierra sites, such as Yayno, were elaborately fortified. Somewhere towards the end skull-deformation and primitive trepanning were known on the coast.

To judge by the mummies disinterred in 1925 from the underground necropolis of Parakas, the possessors of this culture were of medium stature, slight in build, and relatively of poor muscular development—characteristics certainly not shared by the later Keshwa and Aymara of Peru. Sr. Tello,⁴ somewhat irrelevantly, notes a predominance of female burials, and 'an apparently low infantile mortality'.

Again (disregarding such apparently unwarranted speculations as those of Sr. Posnansky, who believes that the Chinese may have reached the Peruvian coast as early as 2000 B.C.) three theories attempt to account for the origin of this culture of the first epoch. Dr Max Uhle⁵ believes Peru was profoundly influenced at an early date by the diffusion of Mayoid influences from the coast; most Americanists, at least until recently, postulated the Andean valleys, if not the forested slopes of the Montana, as the birthplace of the first efforts to cultivate maize and build rude fortresses; the 'Pacific school', with some vagueness as to its datings, brings the culture from Polynesia or Polynesianised Asiatic sources.

Dr Uhle's case, formulated after his inspection of the basurales of Ancon in 1904 and strengthened by his subsequent investigation of other sites, still appears factually impregnable. Certain ceramic remains of the first epoch, and nearly all the crude sculpture that has survived, have definite affinities in design and technique to the arts

⁴ *Antiguo Peru*, 1930.

⁵ *Influencias mayas en el alto Ecuador, etc.*, 1922.



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of the Maya Old Empire. This cultural influence presumably came by sea from the Panama region and was diffused southwards and eastwards from the Ecuadorean littoral.

The time element, however, may be seriously questioned. It is extremely improbable that the race which reared the civilization of the Maya Old Empire appeared on the remote Central American scene before 200 B.C. The culture of the Peruvian first epoch, on the other hand, was undoubtedly well under way by 500 B.C. Dr Uhle's 'Mayoid' immigrants may have modified and enriched that culture. But they did not originate it.

The arguments of the school which considers the culture indigenous and its sponsors the archaic Andeans, may be summarized briefly: The systems of cultivation found on the coast are obviously adaptations of a system—terrace agriculture—suited to mountainous country. The characteristic Andean granary descends to the plains without warrant of necessity: it was an unimaginative importation of the plains-men. Natural mummification is a possibility on the high, dry Sierran valleys, and so must have suggested the elaborate artificial embalmments. The first epoch culture is not a phenomenon sharply localized in the region of Peru—one or other of its characteristics is found over wide stretches of the Montana and of the regions to the north and south. It was a concentration and fortuitous grouping of slowly evolved talents and abilities inherent in the American Indian—a concentration which spilled its achievements coastwards. It was an evolutionary point, not an alien importation. In the words of Dr Daniel G. Brinton* 'the culture of the Andean race is an indigenous growth, wholly self-developed and owing none of its germs to any other race'.

As will have been noted, the discoveries of Dr Uhle at least partially invalidate such statements as Brinton's. But the 'Pacific' school, composed of both orthodox and heterodox diffusionists, goes much further. Parakas, the peak of the culture of the first epoch, is on the sea-coast. In the great necropolis of Parakas the art of mummification is found practised in its most perfect form; it is practically unknown in the Andes. Parakas and the littoral generally are supreme in the textile and ceramic arts; so far from having inherited and developed Andean culture, the converse took place. The strata of cultural remains in coastal sites give no evidence of slow evolution from lowlier forms—the crudest pottery often overlies the highest achievements

* *The American Indian*, 1880.

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in ceramics. Pyramid-building, and the practice of rearing temples on the summits of those pyramids, is altogether inexplicable except on the theory of trans-Pacific importation. The methods of maize cultivation, and the very quality and size of the mummified maize-heads discovered, argue experimentation with an unfamiliar food-plant by skilled agriculturists. The fact that nearly every inland settlement of the early culture was intensively fortified is explicable on the grounds that the settlers and builders were aliens in a hostile or semi-hostile country, surrounded by tribes of the indigenous Amerindian population.

The theories of these last two schools are therefore in flat contradiction. Each, selecting arguments from the archaeological discoveries of the last three hundred years, can score points unendingly against the other. To the unprejudiced observer the point of view championed is apt to seem largely a matter of temperament. Neither the hastening activities of the diffusionists' primitive prototypes nor the arid exclusiveness of the 'Andean' school's ancient protégés seem capable of fully explaining the facts.

This, indeed, is to admit, if only by implication, that the belief in American cultural isolation is no longer tenable. For over a century, in spite of the eruption of occasional heretics, such belief has been propounded as an article of faith in American archaeology. The articles appear in need of revision. Disregarding the fact that the Peruvian cultures appear to have been at least partly local—*i.e.* Andean—in origin, it seems no longer possible to deny the play of both Central American and extra-American influences from the Pacific seaboard.

Despite Sr. Posnansky and a host of predecessors it is improbable that South American shores ever witnessed the arrival of junk-loads of Chinese or Japanese colonists. An occasional ship, so manned, may have drifted eastwards and southwards across the Pacific, but the survivors of its wreck, provided they escaped instant massacre, could have left but little impression on either the arts or social customs of the natives. The same applies to seacraft from India or Java. Nevertheless, both the Pachacamac arch and the Tiawanakon wheel, as well as other stray driftage of civilizations seemingly un-American, may have been reared or fashioned under the direction of such castaways from the distant east. They may have been used or admired for a generation and then forgotten together with their freakish originators.

Strong racial and cultural influences could have reached South America from only the Polynesian islands—from Easter Island, or,

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more improbably, from Samoa or the Society Islands by way of the Marquesas and Galapagos groups. And these influences, to account with any plausibility for the alien characteristics which appear in the first Peruvian epoch, must have been brought to bear long before the Polynesian settled down to evolve the unambitious culture of the Oceanic islands—they must have been brought to bear while the Polynesian was still a sea-faring Asiatic.

Here it is necessary to define the scope of the word 'Polynesian'. As was noted earlier in this paper certain Americanists derive South America's brachycephalic second wave of human colonists from Polynesia. But that 'colonization', if it ever took place, was in an era long before the appearance of the Peruvian first cultural epoch's beginnings. The historic Polynesians, according to the theory worked out in detail by Messrs Percy Smith, A. Fornander, and A. C. Haddon, and supplemented and enlarged by Dr W. H. R. Rivers, were Aryans who welled forth south-eastwards from India in a variety of slow-spreading streams, and at a period not prior to 400 B.C. In the course of several centuries the first group, passing beyond Java, peopled the islands fringing Oceania and ultimately settled in Samoa and the Tongan cluster. The second almost re-traversed this route and were the first settlers of New Zealand. Still a third racial group appears to have held to the northeast and east, settling Hawaii, the Marquesas, the Society and Austral Islands, and, finally, Easter Island, Oceania's furthest eastward outpost.

No accurate datings are possible for the sea-going adventures of these uprooted Aryans. Hawaii and Easter Island, separated by wide stretches of ocean, may have been reached as early as the beginning of the Christian era, or even earlier. While the mysterious culture-bringers of the Maya area were carving their first stelae in the plazas of Copan two thousands miles to the north of Parakas on the Peruvian coast, Parakas itself may have seen the crab-sail of the first Polynesian war-canoe rise over the western horizon.

The once-cogent arguments against South American culture having been influenced from the Pacific were threefold: Polynesian craft were incapable of such lengthy voyages as that from Easter Island to the Peruvian coast; had these Asiatic Polynesians reached America in any number they would undoubtedly have brought their characteristic food-plant, rice—which is absent even from Polynesia and makes doubtful the Asiatic origin of the Polynesians; had these Asiatic influences passed through Oceania to America the ceramic art would

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not have remained as completely unknown in those islands as it was prior to the arrival of the Europeans.

But Polynesian seamanship appears to have been of much higher quality than was once thought. The voyage from Hawaii to the Marquesas (of considerably greater distance than that from Easter Island to America) was common in the Pacific of the ninth and tenth centuries at least; so from Hawaii to the Society Islands, an even greater feat. There can now be little doubt but that the rice-plant was known to the Polynesians, but was abandoned in favour of the bread-fruit, cuttings of which were carried from island to island; in America they may have abandoned the bread-fruit in favour of maize with a similar ready adaptability. Pottery-making was not unknown in the Friendly Islands, New Caledonia, Fiji, and the New Hebrides, though the making of it generally appears to have lapsed for lack of suitable material; there was no such lack on the Peruvian coast. The same applies to working in stone. In most of the Pacific islands stone-work is superfluous; trees are plentiful and in gigantic sizes. But in such localities as Easter Island, where timber was scarce but workable stone plentiful, the Polynesian readily returned to the ancestral crafts of megalithic terrace-work and statue-carving. Similarly, while he found adobe convenient building material on the Peruvian littoral he was no less ready to abandon it for stone-work in Tiawanako of the Sierra.

By the end of the first or second Christian centuries, therefore, it is probable that Polynesian leavenings, both racial and cultural, had profoundly altered the character of the semi-civilization of the first Peruvian epoch. No legend or tradition of the clash of Andean and Oceanic wanderer survived into later times. Possibly the two races intermingled peaceably; more probably, to judge by the ruined fortifications of so many ancient sites, a long period elapsed before the alien identity of the invader was forgotten by Andean and invader alike. Yet, in the third or fourth century A.D., when the 'Mayoid' tribes descended on the coasts of Ecuador, it is probable that the descendants of the Polynesians had not only abandoned sea-roving and lost the art of constructing the great canoes which had brought them across the Pacific, but that they were indistinguishably fused with the aboriginal Amerindian populace, with Tiawanako and such-like sites being reared as the cultural efflorescence of that fusion.

The rise of the 'Tiawanakon culture' appears to mark the end of the first epoch and the beginning of the second. With or without

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external aids—apart from the slow-spreading memory of the great Maya civilization now in eclipse in Central America—the nameless Peruvian tribes had begun to rear immense megalithic structures, with but little resemblance to the buildings of the first epoch, from one end of the Sierra to the other. Round such centres as Cuzco, Ollantay-tampu, Tiawanako, and the two towns built of porphyry a few miles from Nasca—two mysterious sites in a region otherwise content with adobe—there must have been dense populations under the control of some central authority or authorities. There is a far-fetched possibility of a pre-Inka political empire. The art of working in metals was coming into being. The art of stone-working had passed—indeed, leapt—from a stage when the mason handled his material tentatively to one in which he moulded it to his purpose as though it had been clay.

Tiawanako is the crown of the second epoch's culture, is indeed the greatest engineering and architectural achievement of Ancient Peru. It is built near the southern shore of Lake Titicaca, 12,000 feet above the sea. The purpose of its ancient builders in rearing such an immense town in the bleak uplands of the Sierra can only be guessed at; and there has been no lack of guessing. The main ruin is a huge, flat-topped rectangular pyramid of earth, covering nearly a square mile. It was originally 'stepped', with each terrace faced with stone, supported by stone walls, and overbuilt with stone houses. In its heyday it must have presented such appearance as few structures in either the New World or the Old. By day it must have dominated the lake and Sierra like a magic city of the clouds. Lighted at night, its appearance could have been scarcely less impressive. Probably it was built to impress. Tiawanako itself may have been a holy spot, a city of pilgrimage.

Besides the ruined mound there are rows of rough pillars which may once have supported the roofings of palace or temple; portions of stairways climbing nowhere; detached monolithic doorways; litter and debris of buildings unclassifiable, and much assisted to their present state by the operations consequent on laying a railway-track through the ruins. Gigantic statues formerly existed among the ruins, according to Cieza de Leon. But they have disappeared, as have the relief-carvings on the slabs of Ollantay-tampu.

Great blocks of trachyte, admirably cut and faced, and many of them weighing several tons, were used in the major building feats of this metropolis in the hills. The architectural skill was considerable, though dull and unimaginative; the stone-cutting remained unsurpassed

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throughout the American continent. Lacking direct evidence, and aware of the feats which the Ancient American could perform with stone tools, the conservative archaeologist hesitates to ascribe the use of metal implements to the builders of Tiawanako. Others do not hesitate. With the disappearance of the stone statues reputed to have decorated the site, consideration of the sculptural technique and abilities of the Tiawanakon is reserved for the much-described Puerta del Sol.

This remarkable monolithic doorway, through which so many fantastic theories have passed to test the credulity of the archaeological world, is portion of a vanished wall and possibly of a vanished, flat-roofed building. It is a little over 13 feet long, is 7 feet above the ground, and 4 feet thick. The actual doorway is 4 feet 6 inches high by 2 feet 9 inches wide, and above it is a central figure in relief with on either side three rows of subsidiary figures.

This is the one important piece of sculpture of the second epoch. Compared with anything Central American the technique is poor. But there are points of resemblance, and it is possible that the 'Mayoid' influences had reached Tiawanako. Identification of the central figure, his satellites, or the meaning and purpose of the complete sculpture remain doubtful. Representations, both naturalistic and anthropomorphic, of the jaguar and condor are plentiful in pre-Inkan Peru of both the first and second epochs. It is presumed that these personifications of the terrifying and destructive forces of nature were the principal gods of both the Sierra and the littoral; if so, the Andean gods completely subjugated the deities of the Polynesian invaders. Wira-Kocha, the Jaguar deity (who survived with considerable prestige into the time of the Inka Confederation itself) is presumed to appear in humanized form as the central figure above the Puerta del Sol. But there are only slight resemblances between this figure and the undoubted Wira-Kocha of Chawin. The Tiawanakon god, if such he was, bears far more similarity to the statues of Easter Island or the figurines of Fiji.

Sr. Tello places the year A.D. 1200 at the end of the second epoch. But long before then Cyclopean Tiawanako and kindred sites appear to have been deserted. Power and importance probably passed to the cities of the littoral. The tide of Peruvian culture now rose, now ebbed, in this region and that. At Pachacamac the first layer of pottery remains above that identified with the 'Tiawanakon culture' gives distinct evidences of cultural retrogression. But the next stratum—

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the famous white-and-red painted black ware—is on a par with any product of the early artists. Invading tribes of barbarians from the Montana may have overflowed the Sierra and broken up the ancient empire or group of principalities which had reared the architectural lustres of the second epoch. In the north, among the Chibchas and Manabis of Ecuador, the art of working all metals except iron was brought to a high degree of proficiency, and gradually spread southwards. Textiles of great beauty continued to be woven. The jeweller and potter found leisure and security for the carving, polishing and slip-painting of masterpieces. The people tilled the terrace plantations around their villages; worshipped the innumerable totems of the village, except on such days as were set apart for adoration of the ancient condor and jaguar deities; helped to repair or more frequently saw lapse into ruins the pyramidal temples reared a thousand years before by the wanderers from the Pacific; joined in wars or forays under the leadership of petty chiefs. But the average tribesman was probably of a singularly peaceful disposition. War as a skilled science had yet to come to the country. Lacking a script, the country lacked history. No evidences of the imported Mayan astronomical and mathematical sciences survived the epoch; possibly they were never imported, or perished early in an unfamiliar milieu. Prior to the twelfth century it is impossible to identify definitely any locality with the later historic tribes.

In the twelfth century, however, the picture clears with the eruption of the Inkas upon the scene. Peru is disclosed as divided into three, or perhaps four great tribal groupings:—dominating the coast, from the city of Chan Chimu, was the 'kingdom' of Chimu, probably the most highly civilized tribe in South America, and with definite Mayan affinities; mid-way the littoral and Sierra were the Chancas; south of them, the Keshwas. Whether these are to be regarded as racial or linguistic classifications is not yet by any means clear, nor whether the Aymara, based on Lake Titicaca, were a separate grouping, or a 'modification' of the Keshwas.

But the Peruvian scene was prepared for its social, if not its cultural, culmination—the domination of the Inkas.

The modern view of 'Inka'—that it was neither a racial nor a tribal name, but the designation of an extraordinarily energetic theocracy at the head of a typical Keshwa tribe—was not held by the Inkas themselves. The Inkas were confirmed diffusionists of the Manchester school. Their first ancestors, Manko Kapak and his sister-queen,

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Children of the Sun, descended on the mountains near Lake Titicaca. From that region, after various vicissitudes, their descendants set out on the mission of conquering and civilizing Peru of the third epoch.

Myth and legend apart, they appear in history as the rulers of a Keshwa confederation in the hilly country lying between the Rios Apurimak and Paucartambo. They occupied the ancient sites of Cuzco and Ollontay-tampu. Southwards, they conquered the Collas (Aymaras) of the Titicaca plateau, then turned their arms northwards and towards the coast. By the time of the coming of the Spaniards they ruled unquestioned from Central Ecuador far into the heart of modern Chile. Round about the year 1430 Paramonga, the great fortress of the Inkas' most dangerous rivals and cultural superiors, fell, and the 'Kingdom of Chan Chimu' was dissolved.

This wholesale conquest was a feat unprecedented on the American continent, and its consequence—the organization of the extraordinary bureaucratic empire of the Inkas—the most interesting experiment of its kind ever attempted on any continent. Some knowledge of this experiment is common property—indeed, still awakes amazingly unwarranted passions in modern political references. It is almost needless to say, however, that its approximation to any recent realization of socialism, communism, fascism or the like was excessively remote. It was a theocratic feudalism, either 'an abrupt and entirely revolutionary order of things, exactly as though the laws, customs, arts, sciences, industries and social organization of the new régime had been brought ready-made and fully-developed from another sphere or unknown land', to quote Mr Verrill, or 'not state communism, imposed on the people from above, but a family communism, evolved by the people from below, which the Inka state adapted to its imperialistic purposes as best it could', to invoke Mr W. M. MacGovern, who champions the opposite point of view.¹ It equipped its highly-disciplined armies with copper and even bronze weapons—the first American troops so armed in any number; it possessed a high technique in stone-cutting and architecture, using the parallelogram block, rearing great palaces and temples, but eschewing even the corbelled arch in favour of thatched roofings. It excelled in weaving and dyeing, and in some respects almost excelled the ceramic arts of the coast. It superimposed the worship of its own sun and moon gods on the primitive totemism of the Peruvian tribesmen, and tactfully identified

¹ *Jungle Paths and Inca Ruins*, 1927.

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its own thunder deity with the ancient Wira-Kocha. Its empire of the Four Governments, Tawantin-Suyo, was ruled, with the aid of an efficient civil service, by an elaborate hierarchy, at the head of which was the Inka himself, below him the four Viceroy, below these the rulers of thousands, below these the rulers of hundreds and tens. It was unacquainted with poverty, tyranny, trade, or individual liberty; it controlled every detail in the life of the ordinary citizen—his schooling, his mating, his work, his superannuation. It flung great megalithic roads to north and south of Cuzco into the territories of the barbarians, and marched its disciplined armies ever deeper into those territories on missions of conquest and civilization. It loomed divine, impregnable, unassailable in the eyes of the South American Indian; it met the invasion of Pizarro's Spaniards in 1533 with cowardice and indecision and fell to pieces without any such gallant resistance as that displayed by either the Aztecs and Yucatecan Maya or the wild tribes of the Peruvian Montana.

Its swift débâcle in encounter with an unexpected invasion seems the best proof that it was indeed an alien importation, no evolution 'from below'. Yet, apart from its extraordinary administrative ability and its jealous sun-worship there is nothing fundamentally un-Peruvian in its nature. No doubt it descended on central and northern Peru while the local tribes were far sunk below the cultural level of the second epoch at its best; but it is possible that its 'culture-rulers', the eponymous Manko Kapak and his followers, were survivors and heirs of the high Tiawanako civilization and did but carry a modification of it across the Sierra. Astronomy, the calendar, sculpture, as in all previous South American civilizations, were at a low level; a script was non-existent—its place being taken by the ambiguous quipos, or knotted strings, as mnemonic aids. There was nothing fundamentally un-Peruvian in its nature, it may be reiterated, except its two outstanding characteristics.

Whether these came from extra-American sources, like earlier ingredients of South American culture, is a matter never likely to be decided. But there are few certitudes in archaeological research, and the investigations of German and Peruvian scholars now proceeding at both coastal and Tiawanakon sites may yet bring definite evidence for or against some ripple from that final wave of Rivers' kava-drinking, metal-using people having washed across the Pacific to add its ingredients in rearing the glories of Tawantin-Suyo.

Sleds, Carts and Waggon

by CYRIL FOX

Director of the National Museum of Wales

WHILE engaged in field work near Llanbister in Radnorshire, the writer saw by the roadside, near a country wheelwright's shop, a remarkable vehicle the like of which he had never imagined. On being questioned, the wheelwright said that it was a 'wheel-car' and was of a standard type used throughout the Radnor forest area (and indeed, as was afterwards learned, throughout the central moorland of Wales). It had been made entirely by himself and his smith. He drew attention to a second example, half completed, in the shop. This was purchased for the Welsh Folk Collection of the National Museum of Wales.

THE WHEEL-CAR

The special features of the wheel-car are shown in the photograph (plate 1). These are (a) the great length (13.6 feet) of the body in proportion to its breadth (3.2 feet); (b) the position of the axle-tree *above*, not below the main beams of the frame; (c) the bumpers attached to these main beams at one end—the *front*—of the wheel-car; and (d) the embryo cart structure—standards at each corner, rails opposite the wheels, and cage forward. The bumpers are shod with iron: other interesting details are the slightly-dished, ten-spoked wheels also shod, with five iron strakes (not hoops) centred on the joints of the felloes and affixed with wrought-iron nails with large square-crowned heads¹; and the hubs, of a pattern formerly widespread but rarely found in 20th century work.

¹ Sturt, *The Wheelwright's Shop* (Camb. Univ. Press, 1923), p. 146, notes that hoop tyres had replaced strakes in rural Surrey sixty years ago. It is of the highest interest to find an elaborate technique of high antiquity the obituary notice of which, in a home county of England, has been written, still flourishing in Wales, and, it may be added, in the Welsh Marches. Large nailheads are a medieval survival. Cart-wheels with triangular headed nails may be seen in an illustration in the Louterell Psalter, f. 162A. Mr G. J. Abell, moreover, in a letter to the Editor of *ANTIQUITY*, says that in Devon the cart-wheels were formerly 'studded with triangular pointed nails . . . so destructive to macadamized roads that their use was prohibited in 1822'.

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One horse is harnessed to the car, by chain traces, and when it is being drawn along a level metalled road, as the writer first saw it, it would be difficult to conceive of anything more clumsy or less likely to have any survival value, for the iron-shod bumpers strike the ground at intervals. The wheel-car however, was not made for the roads of civilization, but for rutted byways and for mountain-side transport. Under such conditions, loaded high with hay, or fern for bedding, it is seen to be an excellent example of high specialization, of adaptation of means to ends. The bumpers act as a brake on steep slopes; the position of the axle-tree, primarily necessary to keep the body of the vehicle low for braking purposes, ensures smooth clearance if the wheels sink deep, and reduces the risk of a sudden jar on rocky outcrops; while the form of the body fits the narrow trackways, sometimes deeply eroded, of this difficult land.

A hill farmer in Radnor Forest, who has all his life been using wheel-cars, told me that although apparently clumsy it was for a skilled man by far the best vehicle for mountain country, and that it was rapidly going out of use because the younger men on the farms would not take the trouble to learn how to use it properly. Since, moreover, I have been informed that road surveyors object to wheel-cars on metalled roads because of the damage they cause, we may expect that converging pressures, psychological and economic, will ere long result in their complete disuse. It will be a pity.

The possession of so unusual a vehicle provoked enquiry as to its origins. The fact that it is attached to the horse by traces, and that the bumpers are at the fore-end, suggested that the primitive and early form may have been a sled, dragged along by ox or man by means of ropes. The sled is still used in the mountainous parts of central Wales, and two types are illustrated from Montgomeryshire. My colleague Mr Iorwerth C. Peate, who kindly supplied the photographs,² points out that type A (plate II) is 'not generally tilted upon the runners, but the farmer—who invariably sits on the new runners and often makes the sled himself—can shape the pegs to take the sled at any angle which suits his land best. For instance, if most of his carting is up-hill, the body of the sled will be tilted as in the photograph. But in most cases the runners are fitted close to the body. This sled is used for all farm cartage, and for harvesting hay, oats, barley, etc., fern and peat.

² I gratefully acknowledge the help I have received from Mr Peate in working out the history of cart types in Wales.

SLEDS, CARTS AND WAGGONS

It is to be found on all upland farms in the Llanbrynmair district today, and is considered far more useful than any cart'. Type B (plate III), is used for carting wood, gorse and such materials as cannot be carried easily in type A. The runners are attached in the same way as in the latter. Since both vehicles, Mr Peate adds, 'are what was described to me by a farmer as "dead weight", there is no great danger of their sliding on to the horse's hoofs even on steep slopes, but they are generally braked when necessary by placing a piece of wood (*any* piece!) attached by chains crosswise under the front of the runners. The sled is then under perfect control'.

There is obviously a wide gap between these sleds and our wheel-car, and on the evidence hitherto presented there is nothing to connect them. The vital link, however, exists, in the shape of the wheel-sled.³ This interesting type is illustrated (plate IV) by an example now in use at the farm of Brynaerau Isaf, Llanbrynmair, Montgomeryshire. The wheel-sled is similar to the sled, except that the runners extend from the front for a short distance only, and that at the rear end two wheels are attached, 'sometimes of wood, but now generally of iron'. These wheels are locked for braking.

The evolutionary history of the wheel-car is clinched by a literary record. Walter Davies mentions in his *General View of the Agricultural and Domestic Economy of South Wales*, published over a hundred years ago (in 1815), that at this time the wheel-car had 'low wheels' (*i.e.*, small solid wheels) on an underslung axle.⁴

The sequence thus established is summarized below, and is diagrammatically illustrated (figure 1) on page 189. I have sketched the 1815 car (no. iii in the series) as having a *straight body*, for it is obvious that the upward central curve of the modern wheel-car (together with the overslung axle) represents the effect on the design of the introduction of *large wheels*. The combined effect of these correctives is to keep the bumpers or runners as near the ground as they were with the small-wheeled type, and so to enable them to continue to perform their function as brakes.

Evolution of the Wheel-car

- i. Sled, plate III. Still in use in Wales.
- ii. Wheel-sled, plate IV. Still in use in Wales.

³ 'Ground-car', in Monmouthshire. Information from Sir Joseph Bradney, F.S.A.

⁴ Vol. 1, p. 205. 'Its forepart slides along the ground, and under its middle is a pair of low wheels. It has a long body . . .'

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- iii. Wheel-car with 'low' (solid?) 'wheels', 1815. Extinct in Wales. Sketch represents probable appearance.
- iv. Wheel-car with large spoke wheels, plate 1. Still in use in Wales.

THE GAMBO

A more normal type of farm cart, commonly used in Wales, the gambo or gamble, is illustrated in plates v and vi, one taken from the front, the other from the back. This specimen was seen at Tile House near Knighton, Radnorshire, during field work on Offa's Dyke, and was photographed by my friend Mr W. J. Hemp, F.S.A.

The reader will notice that the gambo shows features—the wheels, the long and narrow body with the heavy longitudinal beams of the frame, and rails and standards for holding the load in place—identical with the wheel-car. These parallels in form and structure suggest that the gambo has a similar origin. But there are obvious difficulties in this solution; for the horse, in the gambo, is harnessed into shafts (rigid extensions of the frame) and there is no automatic braking on slopes.

Both Mr Hemp and I commented on the resemblance of the gambo to ox-carts met with on the northern shores of the Mediterranean. Walter Davies, in the *General View*, already quoted, describes the type in 1815, almost exactly as it is today; but he says it then had either shafts for a horse or 'a beam for oxen in yokes'.⁵ We may then regard the vehicle as of high antiquity, and as the British representative of a Continental ox-cart.

How then are we to account for the gambo's superficial resemblances to the wheel-car? I am inclined to consider these resemblances as the result of *convergence*—due to the two types being associated over a long period of time in the same environment.

THE TRUCKLE

The list of interesting cart types in Wales is not exhausted. A simple vehicle which may still survive in out of the way districts, and which at all events was in use within living memory in the Vale of Glamorgan and Pembrokeshire, is illustrated by watercolour drawings in the Royal Institution of Swansea and the National Museum of Wales. The latter drawing, plate vii, dated 1886, shows the main features of

⁵Vol. I, p. 207.

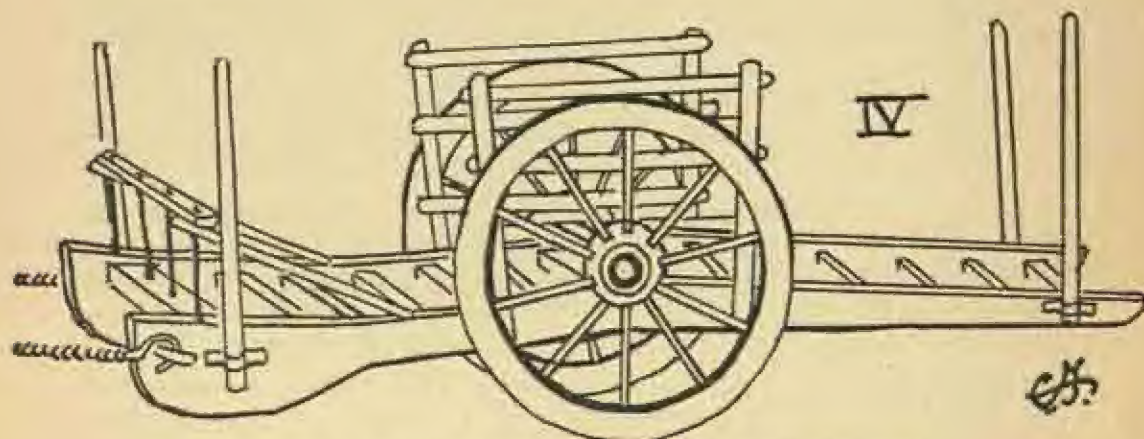
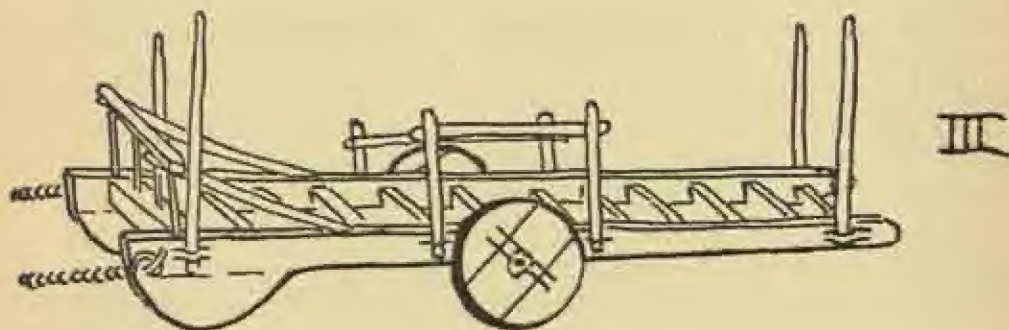
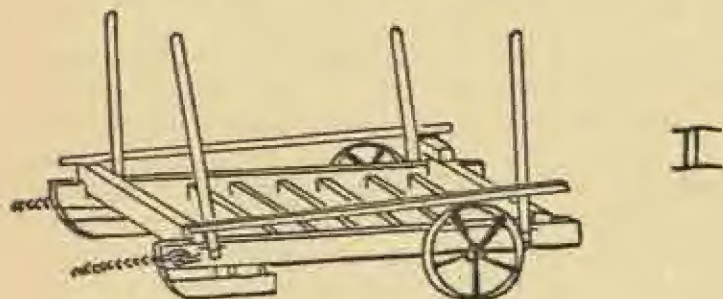
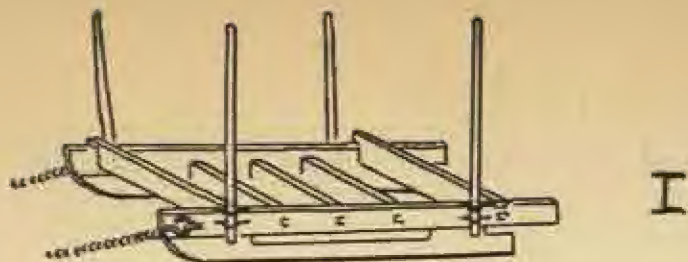


FIG. 1. DIAGRAMS ILLUSTRATING THE EVOLUTION OF THE WHEEL-CAR

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this 'truckle' car or cart, the most striking of which are its small solid or 'block' wheels.* The type is perhaps more clearly exemplified by the photograph (plate VIII) of an Irish specimen. The truckle cart looks as though it might have been derived from a wheelless vehicle: not a sled like the wheel-car, but a shafted type, the free ends of which rested on the ground.

To anyone who is acquainted with the Irish or Welsh countrysides, the slide-car at once suggests itself as a probable ancestor of the Truckle and its related forms. This primitive and usually home-made vehicle consists of two poles or shafts joined by a series of cross bars at the broader end, on which a cage of basketry as in the Irish example illustrated (plate IX), or a framework of wooden staves reinforced with iron rods as in the Welsh example figured opposite, is placed to hold the load. The horse is harnessed between the shafts, and the heels of the structure rest on or drag along the ground. Though apparently clumsy it is efficient on steep slopes, and is freely in use today on Welsh farms, *e.g.*, around Builth Wells in Radnorshire, to bring down fodder, etc., from the mountains, and in the Glyncoedwg district of Glamorgan, where it is used for harvesting hay.

The 'truckle' car then, is only a slide-car with solid wheels added, and with a more substantial framework for the load.

It is just possible that the origins of the truckle may be carried still further back, and that it evolved from a sled—not one like those hitherto discussed, but a v-shaped structure. Mr Harold Peake tells me that in British Columbia, when the ranchers are working under heavy pressure at hay harvest, and the supply of carts or waggons is inadequate, he has seen two poles laid out in the form of a v roughly fastened together at the closed end, and hauled by ropes or traces (see fig. 3). The other ends are kept apart by the downward pressure of the load of hay. It is easy to see how the slide-car might have been evolved—through several intermediates—from such an improvised structure; that the 'heels' of the car are its widest part, is suggestive. All that is really necessary to effect the transformation is for the 'closed' ends to be separated sufficiently for a pony to get within them (when horse transport superseded man-haulage) and for the terminals to be fixed apart by a cross-bar.

We can thus present a possible evolutionary sequence for the

* Small block wheels, on an iron axle, are to be seen on a mid-19th century Welsh cart in the National Museum of Wales.

SLEDS, CARTS AND WAGGONS

truckle as follows: the sequence is also shown diagrammatically in figure 3 on page 193.

Possible Evolution of the Truckle Cart

- i. V-sled, figure 3 (1), as seen in British Columbia.
- ii. Slide-car, figure 2, still in use in Wales.
- iii. Truckle, plate VII, recently extinct in Wales.⁷

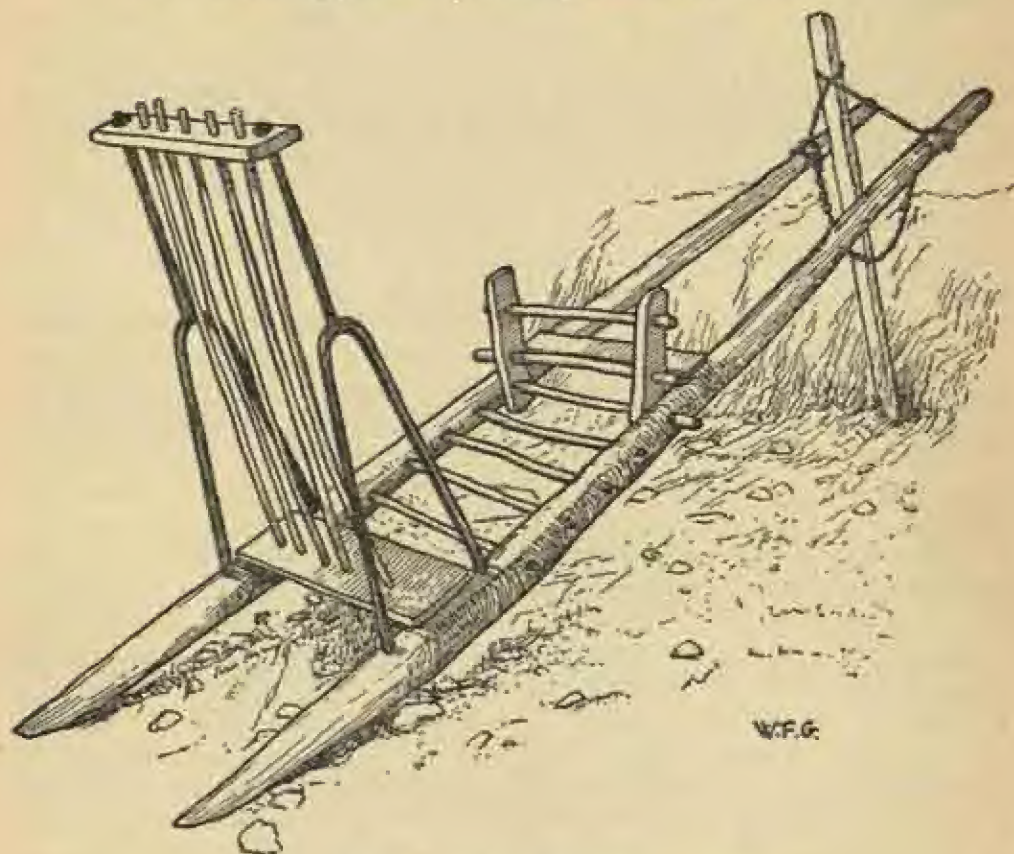


FIG. 2. SLIDE-CAR, WELSH TYPE, BRECKNOCKSHIRE
Sketch by W. F. Gifford, M.A.

⁷It is not suggested that the evolutionary changes discussed in this paper (apart from the final specialization of the wheel-car) took place exclusively in Wales—or even in Britain. For example, Sigurd Grieg (*Oseberg Fundet* II, figs. 13, 14) figures solid-wheeled cars structurally identical with the 'Truckle', till recently in use in rural Sweden. It is, however, of the greatest interest to observe early forms existing side by side with developed types in the same country (Wales) and even county (Montgomeryshire).

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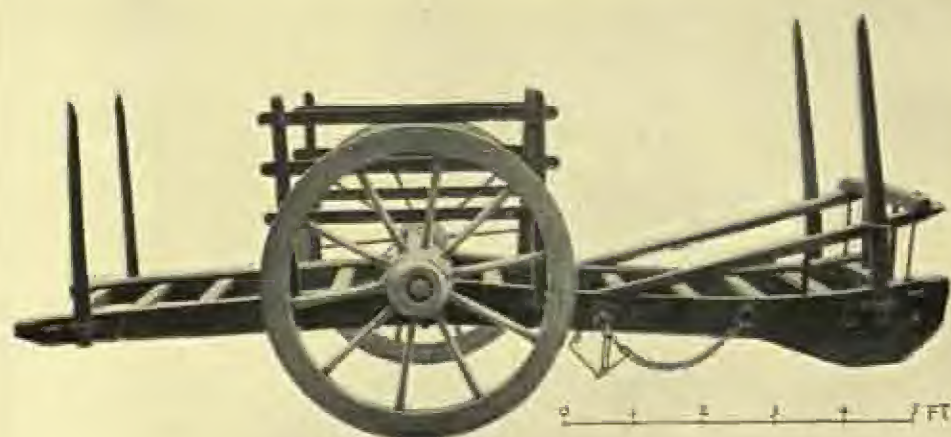
WAGGONS

Means of horse transport much more highly developed than those hitherto described are, of course, found in all parts of Wales. In the coastal districts in particular, where corn was formerly grown, waggons or wains equal in design and workmanship to the best in the English counties were until the end of the 19th century constructed by Welshwrights.

It would be difficult to overpraise the feeling for form and proportion, and the skill, exhibited by the school of craftsmen in the Vale of Glamorgan which, in the 18th and 19th centuries, produced the Glamorgan bow-waggon, at one time the pride of the farmers of that county. The type became fixed in the second half of the 19th century (if not earlier), and was not thereafter changed, judging from the examples seen by the writer. The curved lines of these waggons seem loveliest when they are drawn, empty, across the dipping and rising 'lands' of the cornfields; they possess the seemingly-inevitable beauty and fitness of the last phases of the sailing ship, and of other specialized creations which have been perfected by generations of men content to work in one tradition. Such waggons in Glamorgan were almost heirlooms; they were only purchased by farming families at intervals of fifty years or so,^a and the writer is informed that in the Cowbridge district when the wright had delivered to the farmer a new waggon, gay with blue and red paint, it was customary that its first journey should be with the family on Sunday to church or chapel. The example figured (plates x-xiii) was made by Richard Aubrey, one of a family of wrights working at Cowbridge, not later than 1885. One of his blacksmiths was William Baldwin. The waggon is said to have been made for a Morgan of Sker House near Porthcawl (the scene of Blackmore's novel, *The Maid of Sker*) and has been owned by Morgans for 45 years. The features which place the Glamorgan bow-waggon in the forefront of our noble series of insular waggon-types are the curved surboards (which give the type its name of 'bow-waggon'), the design of the panelled sides, the head- and tail-boards with their rows of

^a Age of waggons: there are waggons still in use in Glamorgan over a hundred years old. One, made at Marychurch in 1825, is owned and used by the great-grandson of the maker, Morgan Williams; the writer was recently informed by a retired farmer, Mr Evans, of Llantwit Major, of a waggon sold by him in good condition in 1897, which was made in or about the year 1760. It had oaken axles (but more likely ash, i.e.p.), regarded by Mr Evans as very primitive indeed.

PLATE I



WHEEL-CAR, RADNORSHIRE. SEEN IN PROFILE (FRONT TO RIGHT), AND FROM THE BACK
Ph. National Museum, of Wales.

PLATE II



SLED TYPE A, IN USE AT SANT-HIR, LLANDRYNMAIR, MONTGOMERYSHIRE.
Pp. G. H. Poole

PLATE III



SLED (TYPE B) IN USE AT NANT-HIL, LLANBRYNMAIR, MONTGOMERYSHIRE
Ph. G. H. Pugh

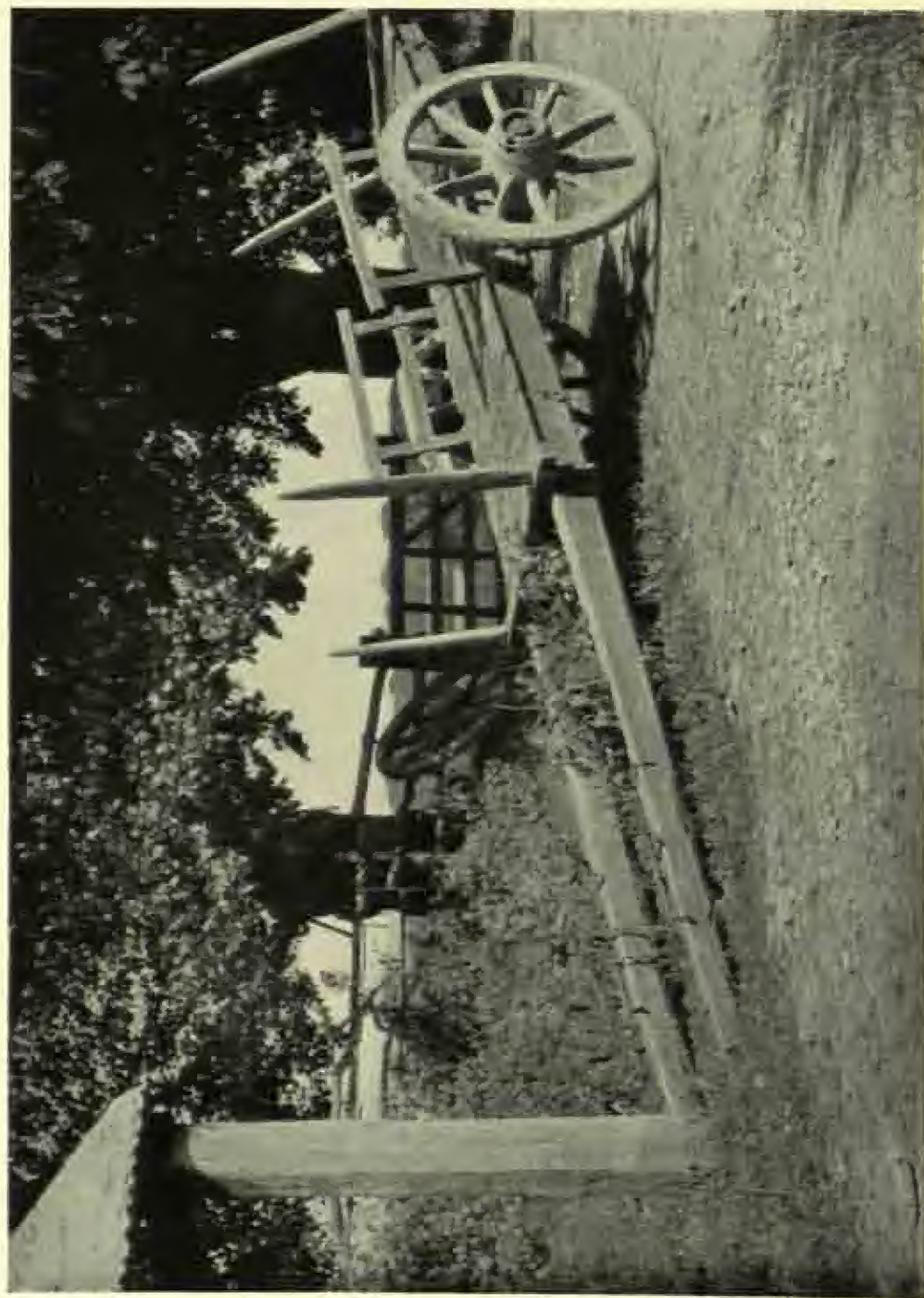
PLATE IV



WHEEL-SLED, IN USE AT BRYNAERAU ISAF, LLANDRYNSMAIR, MONTGOMERYSHIRE

796. C. H. PUGH

PLATE V



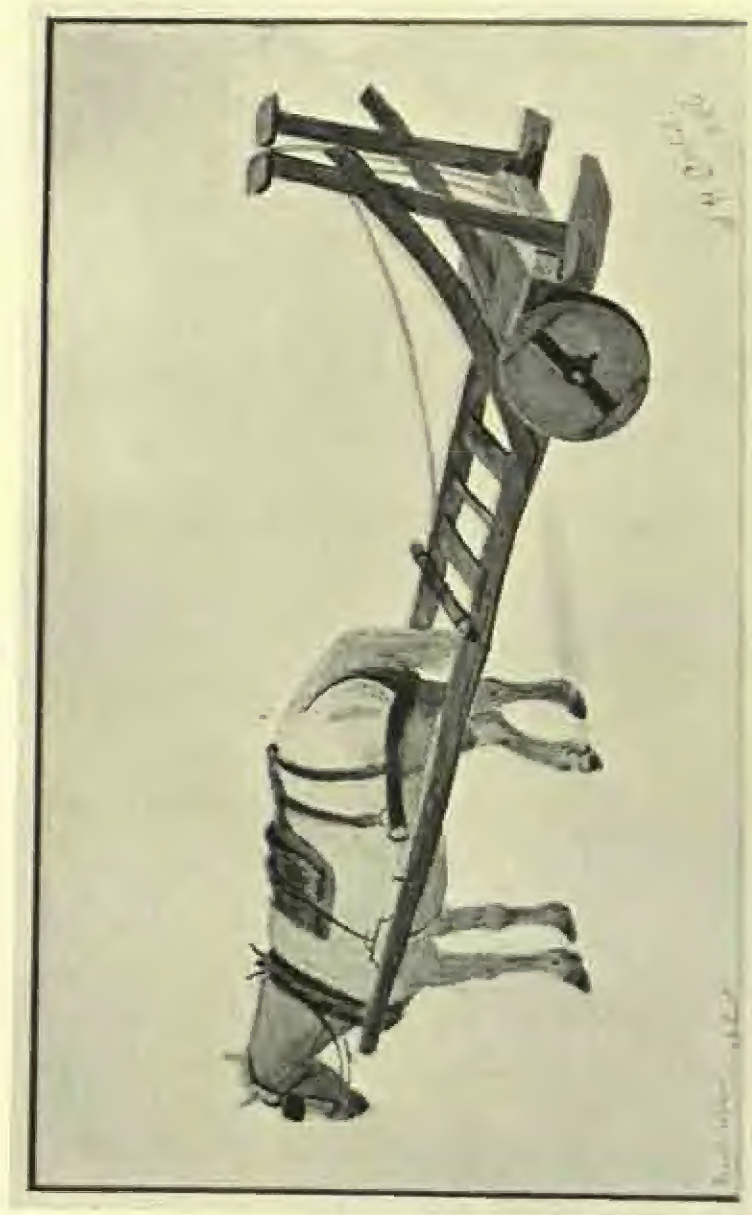
GAMBO, AT TILF HOUSE FARM, NEAR KNIGHTON, RADGORSHERE
By W. J. Hooton, F.R.S.

PLATE VI



GAMBRO, CONSTRUCTIONAL DETAILS
Ph. W. J. Hemp, c.s.a.

PLATE VII



TRUCKLE CART
Drawing dated 1880 in National Museum of Wales



IRISH WHEEL-CAR

PLATE IX



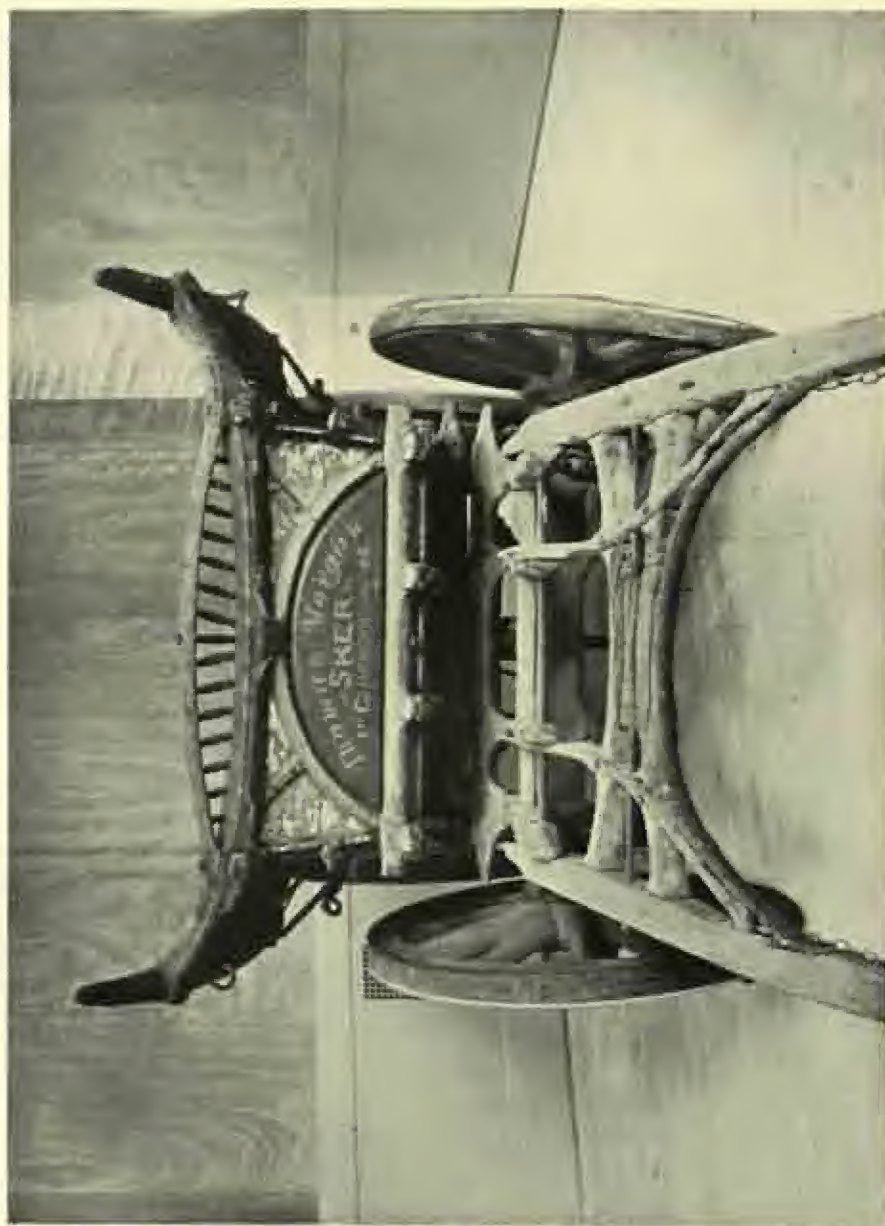
SLIDE-CAR, ANTRIM, IRELAND

PLATE X



HOW WAGON, GLASGOW, 1885 (THE WHEELS ARE NOT ORIGINAL)
PA. National Museum of Wales

PLATE XI



BOW WAGON, GLAMORGAN: FRONT VIEW
J96, National Museum of Wales

PLATE XII



BOW WAGON, GLAMORGAN : DETAILS
J.R. National Museum of Wales.

PLATE XIII



BOW WAGON, GLAMORGAN : DETAILS
Ph. National Museum of Wales.

PLATE XIV



BOX WAGON, VALE OF CLWYD, NORTH WALES
196, National Museum of Wales

PLATE XV



BOX WAGGON, VALE OF CLWYD: DETAILS
Pk. National Museum of Wales

PLATE XVI



OX-CART, ORENEY
Pa. Thomas Kent

SLEDS, CARTS AND WAGGONS

balusters, the bracing of the shafts, and, last but by no means least, the ironwork. The blacksmith has everywhere accurately related the form and scantling of the iron to constructional needs, and, where opportunity offers, has created beautiful detail. Special attention is

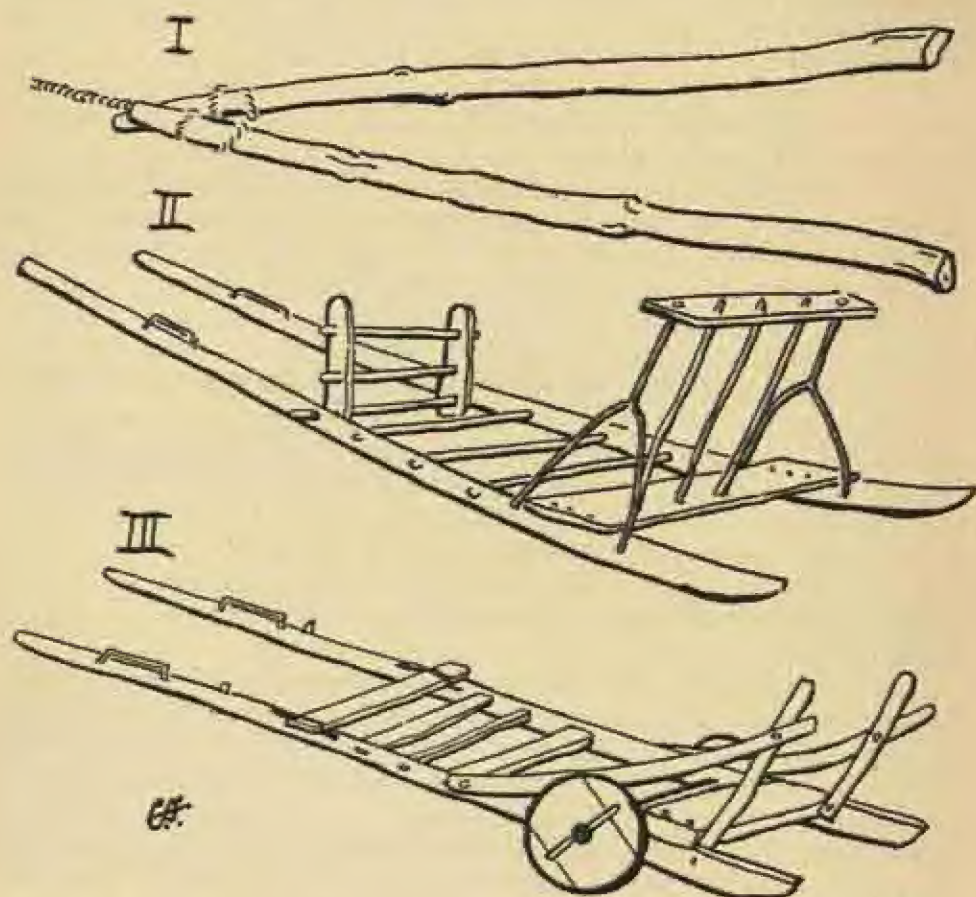


FIG. 3. DIAGRAMS ILLUSTRATING THE EVOLUTION OF THE TRUCKLE (III) FROM THE SLIDE CAR (II); AND THE POSSIBLE SOURCE (I) OF THESE TYPES

directed (plates XII and XIII) to the 'harms' (*sic*), front, centre, and back, which support the side frames and the surboards; William Baldwin described to the writer, with the proper pride of the craftsman, how the curved irons were welded on to the vertical shaft, and 'then cased

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over to hide the weld'. The smith-craft of the country forges was clearly an 'art' as well as a 'mystery'.⁹

The use, for centuries, of oxen as draught animals in Britain renders it not improbable that the spiked ends of the surboards and the rising curve of the upper rail of the head-board between them (plate xi) are zoöomorphic—reminiscent of the frontal of the horned ox; the balusters, then, represent the fringe of hair above his broad brow.

The waggon above described has been acquired by the National Museum of Wales for the Welsh Folk Collection; and it is much to be desired that efforts should be made before it is too late to secure at least one example of every *regional type* of wain in England (and Wales), as being one of the highest expressions of our native craftsmanship, and that steps will be taken to determine the boundaries within which each type was or is in use. I doubt if county boundaries are as important in this connexion as our nomenclature—'Wiltshire waggon', 'Sussex waggon'—would suggest.¹⁰ Furthermore, the necessity of learning (before all the old craftsmen are dead) the names of the several parts and details of the structures in various counties (as has been done for Surrey) should be emphasized. No bow-waggons have been built in Glamorgan for thirty years and they never will be again; the craft decayed with the decay of corn-growing. The country wrights, however, still appreciate the waggons, they know all the technical details and are glad to apply traditional and inherited knowledge of their construction to their repair, as was done in the case of the example under review.

With such information as is here envisaged we could construct a distribution map showing the range of the types, and see to what extent the zones thus defined are related to political, geographic or economic areas. The writer is conscious of the inadequacy of his information on these matters even for the districts with which he is especially concerned, and it is not improbable that others interested are in like case. Only by concerted action can the necessary data be obtained and the requisite material be preserved. Pending the founding of Field Museums, national or regional, where the waggons can be permanently lodged in

⁹ It may be noted that the bed of the waggon is long-boarded. Sturt says that this better method had been replaced by cross-boarding in his shop (in Farnham, Surrey) before 1884, *The Wheelwright's Shop*, p. 67. The Glamorgan waggon unfortunately has lost the cratches or gornals for carrying hay.

¹⁰ The essential features of the 'Glamorgan' waggons—though not, I think, so finely developed—occur in Gloucestershire and western Oxfordshire waggons.

SLEDS, CARTS AND WAGGONS

their proper setting—the cart-shed of a reconstituted farm-stead— it may be suggested that the needed specimens of the type or types in any given county could be secured by the co-operation of three individuals : (1) a country auctioneer, who has early information when suitable examples are to be sold ; (2) someone with barns or stables willing to house the waggons until a Field Museum comes into existence ; and (3) a person who will provide the small sum needed for their acquisition. The writer has been told that, in Glamorgan, these old waggons, when they come under the hammer, sell for a mere song—£1 to £5, and it may be suspected that the same conditions apply almost everywhere in Britain. Some such procedure as is indicated above is essential if these vehicles are to be procured for museums at a reasonable figure. The waggon depicted in plates xiv and xv provides an illustration of the latter point. It is a fine example of the type in use in the Vale of Clwyd (North Wales) and is about fifty years old. A report, made for the National Museum, emphasizes its fine ironwork and original cratch. One of its original (dished) wheels, shod with a double row of strakes, is shown on plate xv ; part of its straight surboard can also be seen. The owner pointed out that it was worth at least £25 to him as he needed it for service ; though its present-day value in the open market was judged by him to be about £1. (The suggested scheme could of course be advantageously extended to include obsolescent vehicles of all types).

Any attempt to discuss in detail the evolution of our British four-wheel waggons would carry us far in space and time. The type, generally speaking, is the common inheritance of western European peoples. An important example is the waggon accredited to the Early Iron Age civilization of Denmark found in the Deibjerg bog, West Jutland, Denmark, and dating from early in the Christian era, which forms the frontispiece to volume 2 of Du Chaillu's *Viking Age*. This waggon has a platform for a cult-figure or idol, affixed to the side frames ; it has very finely wrought twelve-spoke wheels and the pole has a forked attachment like that of a modern ox-cart. Other Celtic waggons of similar date but less completely preserved are known.¹¹ There is important monumental evidence fixing the type of the Roman *carruca* of the early centuries of the Christian era ; particularly on the column of Marcus Aurelius (A.D. 161-80). This baggage waggon has

¹¹ See Sigurd Grieg in *Oseberg Fundet*, II, pp. 309-10.

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a box-like body, as has a Teutonic waggon (shown by the platform to have been devoted to religious purposes) on the same monument.¹²

The well known waggon of the Viking period from the Oseberg ship-burial (c. A.D. 800) has spoked wheels, roughly wrought with deep felloes and but little removed from block-wheel types. The waggon has a rounded body of a form which survives to this day in Swedish peasant carts.¹³

The bodies of medieval waggons in France and Britain are of the box type seen in the earlier Roman and Teutonic vehicles. Many excellent representations of the French types of the 13th century are to be seen in an illuminated manuscript now in Mr Pierpont Morgan's library, reproduced by the Roxburghe Club.¹⁴ The bodies of these French waggons are rectangular, with lattice or laths filling in the main frame of the sides; they are drawn by horses or oxen, with traces and trace bars, or a pole. The wheels have eight spokes. A well known English example of the 14th century is that illustrated on ff. 181b-182a of the Louterell Psalter.¹⁵ This is highly ornamented and has a hood, being designed as a travelling carriage for the transport of the ladies of a well-to-do family. Constructionally it is similar to the French waggons.

None of these medieval waggons show any trace of surboards for increasing the loading area, such as are seen on the Glamorgan waggon, and, in various forms, on most of our modern waggons and farm carts. It may be suggested that since they are all either military or pleasure vehicles we cannot institute comparisons. This is true; but since a typical farm cart loaded with corn in the Louterell Psalter (f. 162a) has a simple rectangular rail-and-post body without trace of surboards, we may regard it as probable that this feature is a comparatively recent development. The simplicity of form, and similarity in type, of all the medieval French and English waggons referred to, leads me to suspect that highly specialized modern types of which the Glamorgan waggon is characteristic may be developments of the 16th-19th centuries, that is, they belong to the period in which individual farming

¹² Ibid, fig. 12.

¹³ Oseberg Fundet, II, fig. 2 and pl. 1: *Saga Book of the Viking Society*, vol. 10, fig. 21.

¹⁴ *A Book of Old Testament Illustrations of the Middle of the XIII century*: described by S. C. Cockerell, 1927. I owe this reference to Mr H. S. Kingsford. See ff. 5b, 6b, 9a, 21b, 27b, 39a.

¹⁵ Reproduced by E. G. Millar, *English Illuminated Manuscripts of the XIV and XV Centuries*.

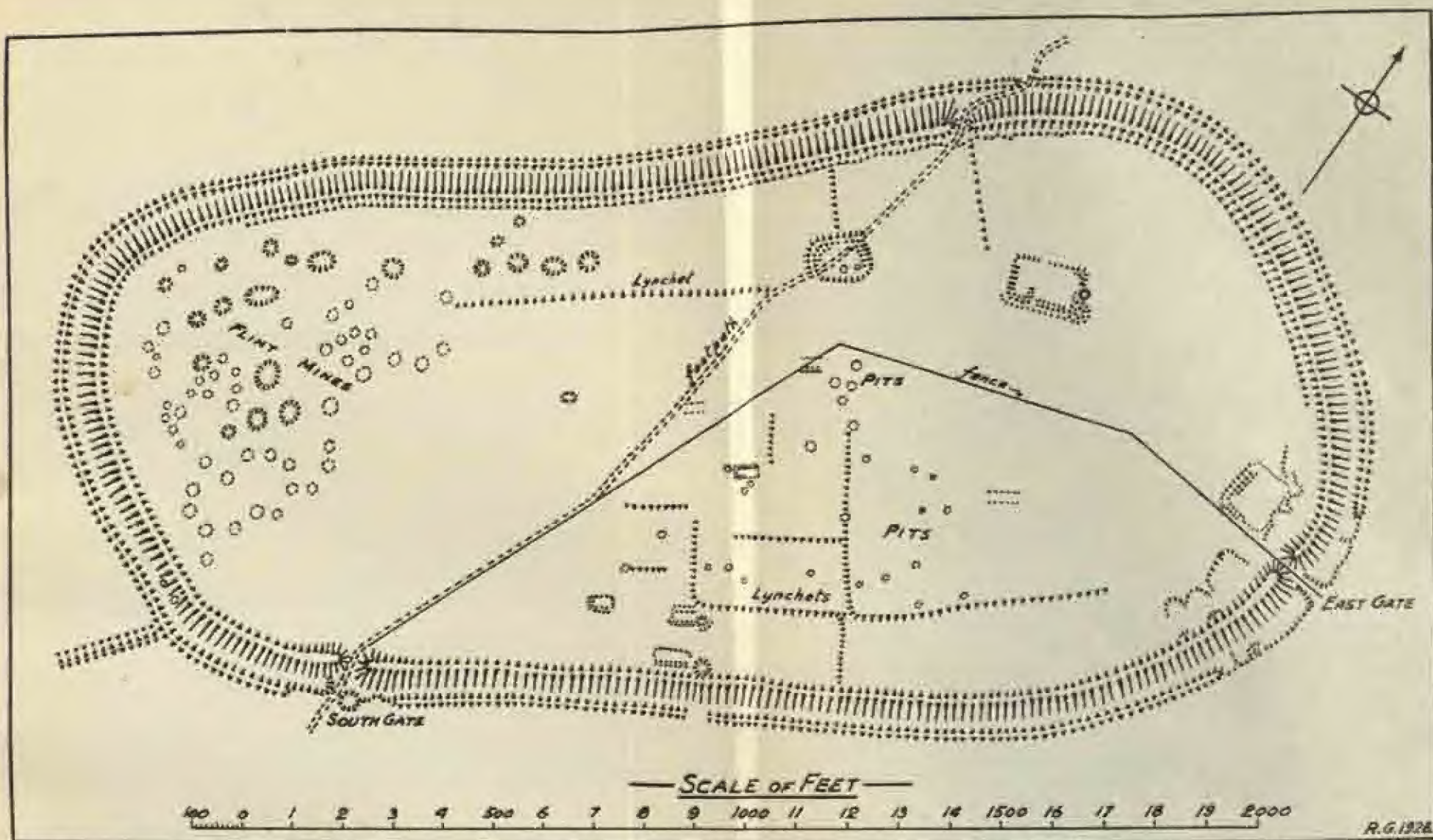


FIG. 3. PLAN OF CISSBURY, SUSSEX
 From Curwen's *Prehistoric Sites* by courtesy of the Homalid Association



TREASURE-TROVE

Objects of *gold or silver* which have been *hidden* in the soil or in buildings, and of which the original *owner cannot be traced*, are Treasure-Trove, and by law the property of the Crown.* If, however, the finder of such objects reports the find promptly, and it is decided that it is Treasure-Trove and therefore the property of the Crown, he will receive its *full market value* if it is retained for the Crown or a museum. If it is not retained, he will receive back the objects themselves, with full liberty to do what he likes with them ; or, if he wishes it, the British Museum will sell them for him at the best price obtainable. The only way in which a finder can comply with the law and also obtain these advantages is by reporting the find promptly to the proper authority.

The proper authority is the Coroner for the District in which the find is made, for he is the authority who enquires " of treasure that is found " and " who were the finders ". (Coroners Act, 1887, section 36).

Anyone therefore who finds such objects should report the find to the Coroner, either direct, or through the local Police, or by writing to the Director, British Museum, London, W.C.1, who will communicate with the Coroner.

Coins and other ancient objects of copper, bronze or any metal other than gold or silver are *not* Treasure-Trove and finds need not be reported to Coroners. But the British Museum is glad to hear of such finds and, if they are reported to the Director, will in suitable cases arrange for purchase or sale.

Any further information may be obtained by applying to the Director, British Museum, London, W.C.1.

* Unless (as in some rare cases) the "Franchise of Treasure-Trove" has been expressly granted to a subject, in so far as finds in the particular locality are concerned.



SLEDS, CARTS AND WAGGONS

was substituted for the medieval system, which was largely communal, and subject to a variety of controls, and customary limitations.

If this should prove to be the case, it is probable that *the release of initiative in farming stimulated experiments in the associated crafts, in particular among the waggon wrights; the result being the production of regional types of waggon in well-defined areas.*

Whatever the reason may be, the waggons bring out the innate artistry which our peasant stocks in Britain have manifested in all culture periods before the present. That this impulse towards beauty and efficiency in craftsmanship will in some form reassert itself may confidently be predicted.

APPENDIX

SOLID-WHEELED CARTS

It will be recalled that general interest in the subject of solid-wheeled carts was awakened by Mr Woolley's discovery at Ur of a limestone plaque of 3000 B.C. showing a chariot with such a wheel, built up of segments; and by an illustration of a modern Sindi bullock cart with similar wheels, in an article written by Mr Mackay.¹⁶

This produced valuable notes and photographs, published in *ANTIQUITY*,¹⁷ on Sardinian and Spanish solid-wheeled carts by Mr W. J. Hemp, F.S.A., and Mr C. Suffern. A further batch of correspondence on the subject has been sent to me by the Editor of *ANTIQUITY*; I am glad of the opportunity of appending to this article quotations from the letters. The occurrence and distribution of these primitive structures is of special interest to us, for it is probable that the rudiments of civilization rolled into Europe on solid wheels.

Captain D. R. Martin remarks that between Mysore and Ootacamund in Southern India there is 'a belt of country about 20 miles across in which the carts have solid wheels; the normal spoked wheel being found on either side of it'.

Major D. R. D. Fisher, R.A., writing from India, comments on Mr C. Suffern's suggestion that the reason there are no worn central tracks in the ancient Maltese cart-ruts is because the cars were man-hauled:—

'Apparently there is "no worn central track" between the cart-ruts in Malta or Sardinia. There wouldn't be. Look at the photographs [of Spanish and Sardinian carts]. The shape of the

¹⁶ *Antiquaries Journal*, Jan. 1929, pp. 26-29.

¹⁷ *ANTIQUITY*, Sept. 1929, III, 340-342.

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under-carriage keeps the bullocks well apart, with the result that each walks in his own wheel-track—or rather that each wheel follows its respective bullock's hoof-track; result—two fairly broad ruts with the ground undisturbed between them.

The bullock-carts used in this country are, as of course you must know, first cousins to those shown in your two photographs, except that the wheels are a shade less rudimentary. (I have a vague recollection of seeing solid wheeled ones in the Ganges kadir—I will now keep a look-out to see whether I can substantiate this). But a proportion of them are single-draught ones (naturally of slightly different construction); hence it is unusual to see a twin-rut track without at least a suspicion of a central rut.

For these reasons, the hypothesis that the Maltese carts were man-drawn seems to me rather nebulous. Furthermore, tho' I have no notion of what the Maltese cart-ruts are like, I am inclined to think that any cart heavy enough to make a respectable rut would require sufficient man-power to make an equally respectable foot-path—tho' of course the two might coincide.

'P.S.—I have just been looking at half-a-dozen bullock carts—pair-draught. With these particular ones—and they are a very common type—the long narrow wedge-shaped body, made of grass-rope—comes half-way up the pole, keeping the bullocks wide apart, so that each wheel follows its bullock—indeed his tail almost touches it'.

Hitherto we have been in the Far East, but the next document in The Bag *Vehicularius*, as Carlyle would say, brings us near home. It is a photograph of a cart with four solid wheels from the Orkney Islands (plate xvi). Mr Thomas Kent, who sends it, remarks that 'this type of waggon and the team of Oxen is still used in the islands of Hoy and Graemesay, Orkney. The rear wheels are prevented from turning by the chain seen in the photograph, when going down a decline'.

The last document takes us to Canada, and Mr F. G. Roe, the writer, not only adorns a tale but points a moral. He quotes from Alexander Henry the younger, a well-known figure among the early fur-traders in the Hudson's Bay Territory:—

November 15, 1801:—'Men now go again for [buffalo] meat with small carts, the wheels of which are each of one solid piece, sawed off the ends of trees whose diameter is three feet. These carriages we find much more convenient and advantageous than it is to load horses, the country being so smooth and level that we can use them in every direction'. (*The Henry-Thompson Journals*; ed. Dr Elliott Coues, 1, 191).

SLEDS, CARTS AND WAGGONS

These must have worked successfully for a time at least, for in the *Journals* for 1803 we read as follows :—

March 30, 1803 :—‘ One of my men undertook to make a real pair of wheels on the plan of those in Canada : he finished them today, and they were very well done. I made him chief wheelwright, and we shall soon have some capital carts ’. (Coues, 1, 210).

May 5, 1803 :—‘ I started Mr Cadotte with a man for Riviere aux Islets de Bois with one of our new carts. This invention is worth four horses to us, as it would require five horses to carry as much on their backs as one will drag in each of these large carts ’. (Coues, 1, 211).

Mr Roe says that ‘ Henry was in charge of Upper Red River House, or Pembina House, close by where the Red River crosses the (now) International Boundary. It seems possible from this that we have here the beginning of the famous Red River carts ; which I imagine could have held their own with those of Spain for noise, Richard Ford himself being judge. If this be the case it furnishes an interesting example of men in different ages and lands seeking a similar solution in face of similar problems, of which primitive history presents many instances. In Henry’s case, I have found no indication whatever in his *Journal* of any likelihood of him being a man sufficiently well-read to derive the idea from any classical source ’.

Stone Vessels found in Crete and Babylonia

by G. A. REISNER

Director of the Harvard-Boston Egyptian Expedition

A SERIES of Egyptian objects found in foreign lands has been used to date archaeological groups in those lands, especially for periods the dating of which was unknown. In connexion with a study of Egyptian stone vessels I have taken occasion to examine the material reported from other lands, and it appears to me that some of the material used by scholars can be more accurately dated.

Conclusions have often been reached on the dating of single objects found in Egypt, and little attention has been paid to the range of the type in question. A stone vessel found abroad is co-ordinated with a single vessel found in Egypt, but the date of that single vessel is by no means the date of all vessels of that type. Take for example the vessels found at Knossos which Sir Arthur Evans calls bowls with broad flat rims, and I call spheroidal and quasi-spheroidal jars (Type III). They have two roll-handles. The type begins with a spheroidal jar with a round bottom in the middle predynastic period (my Type IIIa). In dynasty I it appears with a flat-base or a disc-base and persists in this finer form until dynasty IV (my Type IIIb), but in dynasty III, a degenerate form (my Type IIIc) appears which becomes predominate in dynasties IV-V, with a flat-base and unpierced handles. The degenerate examples have thick walls and are not so well finished. Now a few of the examples found in Crete are of Type IIIb which may be dated from dynasty I to dynasty IV. The rest are of the sub-type IIIc which may be dated from dynasty III to dynasty V. But not one of them has the round bottom of Type IIIa, and not one can possibly be dated to the predynastic period. Thus for my own use, I lay down:—

Principle no. 1: In using Egyptian objects to date deposits in foreign lands, it is necessary to know the whole range of time during which the object occurs in Egypt, and the variations in form (sub-types) which the type assumes in the course of its range in time.

It is obvious that, in comparing Egyptian objects found abroad with the chronological series of forms (sub-types), the identification must be certain.

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Principle no. 2 : An Egyptian object found abroad must be identical in form, material, and technique, with a type (or sub-type) of known range in Egypt.

This axiomatic principle has been generally recognized. The size may vary, but in general, as the identity arises out of manufacture by the same shops of craftsmen, the size of the foreign-found object will be within the range of sizes known in Egypt. The function of the vessel may however be quite different in the foreign environment from that in the country of origin. I mention for example the use of Rhodian wine-jars and modern petroleum tins.

There is one other point to be borne in mind. Many types of Egyptian objects, in particular vessels, pass through two stages of development—(1) an earlier stage during which the object is made for practical use, and (2) a later stage in which more or less degenerate examples of the type are made for burial purposes only.

It is necessary also to keep in mind the manner in which objects are distributed from one cultural area to another. Ancient trade was carried on both by caravan or water transport and by 'market-to-market' trading—'long haul' and 'short haul' trading. Both types existed from very primitive times. I consider it probable that, by means of 'market-to-market' trading, valuable minerals, such as gold and lapis lazuli, were exchanged in small quantities between Babylonia and Egypt even in predynastic times. The 'long haul' trading is of greater importance but is not necessarily to be assumed. It usually handles raw materials, partially manufactured goods (such as cloth for garments or metal in bars or ingots) and staples (such as food-stuffs, wines, oils). A part of these trade-goods is carried in containers of various sorts which are afterwards utilized in the country of destination, and form a notable factor in the exchange. 'Long haul' trading between two different cultural areas always depends on the good will of political heads, from kings to tribal chiefs, and leads to an interchange of objects and material of a much more valuable character than the ordinary trade-goods. A full picture of the conditions under which the royal trading caravans of the New Kingdom worked between Babylonia and Egypt is given by the Tell Amarna letters, with their exchange of rich gifts. This picture fits in with what is known of the operations of the more recent trading caravans in primitive lands (such as central Africa). It is to be noted that part of the gifts mentioned in the Tell Amarna letters consists of stone and metal vessels as containers of perfumed oils, as well as weapons and ornaments, household

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furniture and chariots of royal quality. Even under less developed political conditions, the caravan leader always finds it advisable to secure the friendship and support of tribal chiefs by similar, although much less magnificent, presents (cf. the experiences of the European explorers in Africa in the 18th and 19th centuries).

In Egypt, many classes of objects made for daily use even in predynastic times were made in manufacturing centres, usually localities especially favoured by the supply of materials and other local conditions, and they were distributed all over the country from these centres. The use of river transport permitted the despatch of bulky and fragile objects (such as pottery) without much loss, as at the present day. The Egyptian objects previous in date to the Old Kingdom which have been found in foreign lands consist almost entirely of stone vessels. These appear also to have been manufactured in special localities although we are unable to fix the number of manufacturing centres or their places. The history of stone vessels in Egypt may be briefly outlined as follows (see *Mycerinus*, page 130 ff):—

(a) In the predynastic period, stone vessels are found in six basic types but are relatively few in number.

(b) In dynasty 0-dynasty I (early part), the basic types were modified; some new types were introduced; and the production was increased.

(c) The great expansion of the types and sub-types came in the reign of the third king, Zer, and in that time the corpus of stone vessels of dynasties I-II came into existence. In dynasty II these old types reached their maximum production, and examples are found in almost every grave (unless completely plundered).

(d) A further development of the traditional forms and a further expansion in the production took place in the reign of King Khasekhemuwy, last king of dynasty II. The corpus set up by that king reached its maximum production in dynasty III and persisted, although steadily declining, during dynasties IV-VI.

(e) In dynasty V, a new series of types were introduced alongside the remnants of the old corpus.

It is well known that periods of great production favour the export of the produced objects. That which is cheap at home may be exchanged for more valuable articles abroad. Thus the period during which we might expect an export, for trading purposes, of Egyptian stone vessels

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is that from the time of Zer (third king of dynasty I) to the end of dynasty III. But the export as gifts, and in particular as royal gifts, of vessels of the old corpus might have taken place any time down to the end of dynasty V; or, in the case of a few bowl-forms, to the end of dynasty VI.

The stone vessels of the older corpus found in Crete were excavated by Sir Arthur Evans at the royal site of Knossos. Therefore they may be presents brought to the Cretan king from Egypt. The examples are as follows (the type designations are those in *Mycerinus*, pp. 130 ff):—

(a) Type IIIb: described in *Palace of Minos* (P. of M.) as bowl with broad flat rim and two pierced roll-handles; range of great production, dynasties I-III; total range, dynasties I-V.

Cretan examples:—

1. *P. of M.* II*, p. 30, fig. 12; porphyry, found in disturbed deposit northwest of Palace.
2. *P. of M.* II*, p. 30, porphyry; lower part with disc-base, found with no. 1 and probably also IIIb.

Possibly some of the fragments mentioned below are also of Type IIIb.

(b) Type IIIc: like IIIb with unpierced handles; range, Khasekhemuwy (last king of dynasty II) to end of dynasty III; total range extends to end of dynasty V.

Cretan examples:—

3. *P. of M.* I, p. 65, fig. 31; syenite, found under south Propylaeum.
4. *P. of M.* I, p. 65, fig. 32; porphyry, badly worn but probably my Type IIIc; found in disturbed debris north of palace site.

(c) Type IIIb or c: see above; fragments.

Cretan examples:—

5. *P. of M.* II*, pp. 31 and 59, fig. 28; porphyry; disc-base; tube bored; lower part only; found in same deposit as nos. 1 and 2.
6. *P. of M.* II*, p. 30; 'a piece of another vessel of brilliantly polished black porphyry'; found in the same deposit as nos. 1, 2 and 5.
7. *P. of M.* II*, p. 16-17; porphyry; fragment, found in debris in Neolithic House A.

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Thus there are reported seven vessels of Type III of which one is complete, one nearly complete, and the rest represented by fragments. As far as can be judged without seeing the material, none of these is of the finer workmanship of dynasties I-II. Certainly none of them is of the predynastic Type IIIa, which has a rounded bottom. In my opinion the most reasonable date for the group is dynasty III but the examples of Type IIIb might be a little earlier and those of IIIc, a little later.

The other Egyptian types of stone vessels found in Crete are represented by one example each. The fragments from which the type is reconstructed are relatively small and the exact identification is by no means certain.

(d) Type I : cylindrical jar, ' bored with a tubular drill ' ; ranges in four sub-types from dynasty I to dynasty VI.

Cretan example:—

8. *P. of M.* II*, p. 16, fig. 6 ; mottled limestone ; base only which admits of several other reconstructions than that given ; found in debris in Neolithic House A, and probably of the same date as Type III, no. 7, above. Very small form.

This fragment of a cylindrical jar, while it is certainly Egyptian, cannot be of the predynastic period. The small forms are known from dynasties I to VI, and are very common at Giza during dynasties IV-VI, but it would be rash to attempt to date it to any one of the first six dynasties.

(e) Type xb (3) : slender conical cup ; range from Khasekhemuwy to dynasty V ; the variation with folded rim spout is known from only one example in Egypt, see QUIBELL, *El-Kab*, pl. x, no. 20 (provenance not given but possibly from grave 101 of dynasty IV).

Cretan example:—

9. *P. of M.* II*, p. 57, fig. 27 ; diorite ; fragment ; found in disturbed debris west of palace.

This type of folded spout is well known in Egyptian vessels of dynasties IV-VI and indeed in diorite bowls. Sir Arthur Evans' fragment may perhaps be reconstructed as a bowl instead of a beaker. The evidence is not sufficient to fix the date exactly in either case. The range of the folded rim is probably dynasties III-VI.

(f) Type xib (4) or (5) or (6) ; bowl with recurved rim, or carinated bowl ; the main type begins in dynasty I with grooved rim, often with

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cord in relief and flat bottom, xib (1). In the reign of Khasekhemuwy and dynasty III, the form appears with an upright rim and in two variations, one with flat bottom, xib (2), and one with rounded bottom xib (3); sub-type xib (2) is found as late as dynasty v (end). In dynasty IV (Sneferuw), the form with flaring recurved rim appears and also occurs in two forms, one with flat bottom, xib (4), and one with round bottom, xib (5); these two sub-types occur in dynasties IV and V and perhaps later; another sub-type with exaggerated flare to the rim occurs in dynasty VI.

Cretan examples:—

10 and 11. *P. of M.* I, p. 86, fig. 55; diorite; fragments of two bowls 'on palace site'. The form may be either xib (4) or xib (5). The range is dynasties IV-V but without excluding dynasty VI.

Fragments of another example of sub-type xib (4) or (5) were also found on the palace site with pottery of the Middle Minoan I period. This is of liparite, a material imported from the Aeolian Islands and used by Cretan craftsmen. This may be a copy of the Egyptian type, a fact which indicates perhaps the preservation of Egyptian vessels of this type for a long time in Crete, as Sir Arthur Evans points out.

The eleven vessels of four types, most of them represented by fragments, are all that I can find in the *Palace of Minos* which can be identified with Egyptian types or sub-types. It is quite clear that none of these vessels is of the predynastic period. All except the last in the list, the carinated bowl, are containers of oils or perfumed ointments and came to Crete without doubt as presents to the Cretan king, not as trade-goods. The carinated bowls which were table dishes of a ceremonial character must also have been brought or sent as presents. It may be assumed that these fragments represented the import of a larger number of vessels than those actually found, but no safe conclusion can be drawn as to the original numbers. Nine of the examples are identified with deposits of debris which are older than the great royal palace. Two vessels, nos. 7 and 8 are, if I understand rightly, connected with the Cretan neolithic period by Sir Arthur Evans. One other, no. 3, is stated to have been found under the south Propylaeum in a stratum between the neolithic and the sub-neolithic. This jar is of the type form IIIc and the most reasonable date is dynasty III but it might be of dynasty IV or V. I would assign the vessels nos. 1-9 to about this same period, dynasty III (with the possibility of dynasties

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iv-v). Nos. 10-11, the carinated bowls, are, as Sir Arthur Evans states, of the period dynasties iv-vi, as far as the date of manufacture is concerned, but may have been preserved in Crete for some time after their importation (as recognized by him).

The only other objects reported in *P. of M.* which I can identify as possibly Egyptian are three fragments of mace-heads (*P. of M.* II*, p. 11, fig. 3, k (d) and l (d); p. 17, fig. 7 (b): k (d) of white marble is reconstructed from the base as a rude pear-shaped mace-head; no. l (d) of variegated stone as a bulbous mace-head; and the other of porphyry is unrecognizable from the figure. Mace-heads of these forms were in use in Egypt as late as the Middle Kingdom. The Cretan fragments were found in the neolithic deposit beneath the original pavement of the palace (l.c., p. 7-8) in stratum B (p. 15). The third fragment was in Neolithic House A and is apparently of the same date as the jar no. 7 of Type IIIb or c. It is quite impossible from the forms and materials to say that these fragments were of the Egyptian predynastic period. They might just as well be of the Old Kingdom, and I would suggest that they are probably of the same date as the stone vessels, that is dynasty III (or perhaps iv-v).

My conclusion is that there is no Egyptian object reported in the *Palace of Minos* which can be dated with safety to the predynastic period or even dynasties I-II.

In addition to this direct material, Sir Arthur Evans has pointed out a number of suggestive similarities with Egyptian objects previous in date to the end of dynasty VI. All this evidence is secondary to the direct material. I may say that I am sceptical of any connexion between the small Cretan figures and the ivory figures of the predynastic period (cf. *P. of M.* I, fig. 52; II*, fig. 13). For my own use I lay down:—

Principle no. 3: Primitive peoples in the same state of culture having similar needs and similar materials are apt to produce objects and decorations of a similar appearance.

Mere similarities between objects of two cultural areas which are not equivalent to identity of form, material and technique, are not sufficient proof of the interchange of objects between the two areas. But if the import of a definite class of objects into a field can be proved, then imitations of that class found in the field in question become significant (as in the case of carinated bowls in Crete). As a corollary, similar objects from different cultural areas do not necessarily have a common origin. In each country a similar object may have been developed

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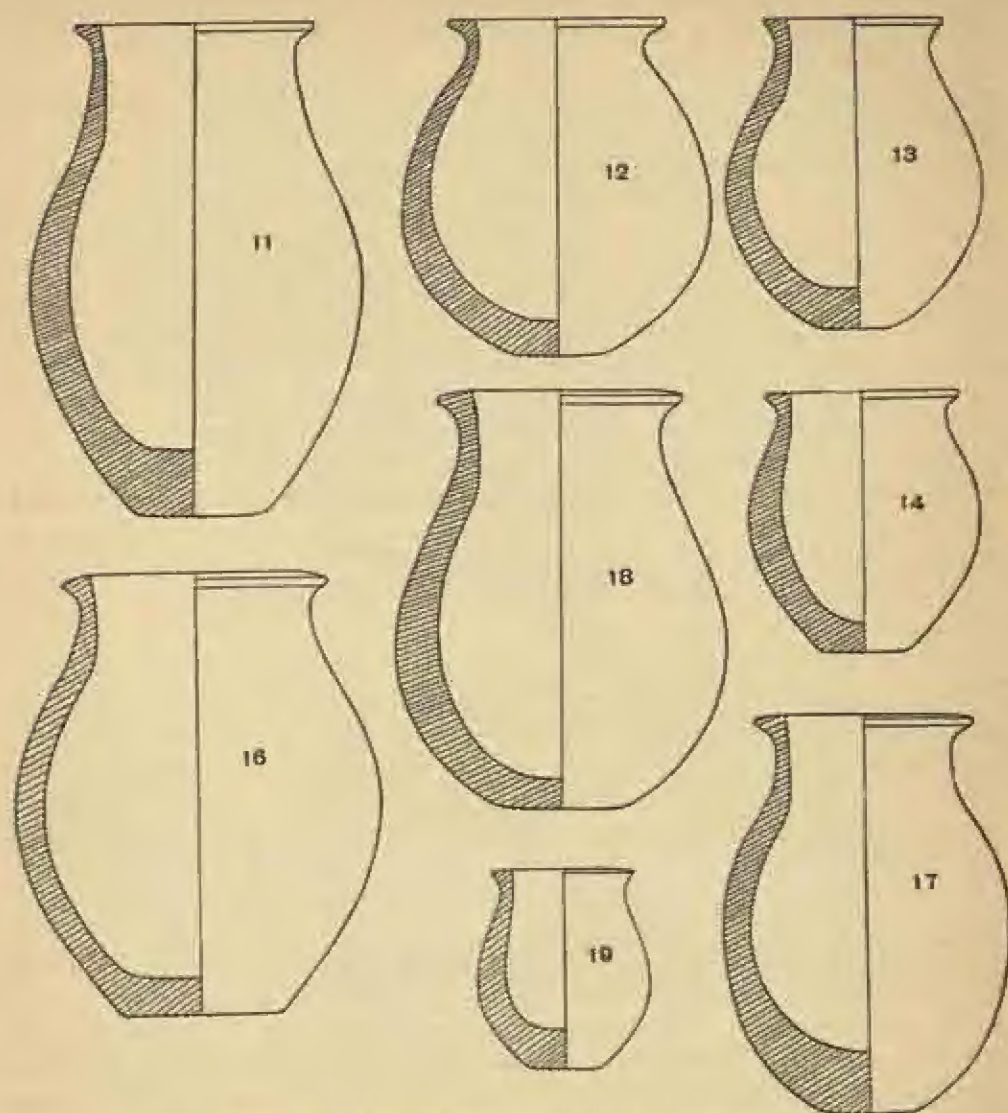


FIG. 2. SUMERIAN STONE JARS, NOS. 11-14, 16-19 : ALL UN-EGYPTIAN FORMS

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independently on the same natural basis (function, material and technique). In view of these considerations, I feel doubtful of the force of the evidence seen by Sir Arthur Evans in the round-topped table (*P. of M.* I, p. 75, fig. 43-45); the double spout (*l.c.*, p. 80, fig. 48-50); and in the seals (*l.c.*, pp. 117-126). The Egyptian flat-topped table was introduced by Khasekhemuwy and continued to the end of dynasty VI, while the Egyptian button seals began in dynasty V.

Sir Arthur Evans' chronological arrangement of his periods is a very fine piece of work. His correlation of the Early Minoan III, Middle and Late Minoan with the Egyptian periods is correct in all essentials. The evidence of the Egyptian material cited above seems to prove that some modification is required for the correlation of the Cretan Neolithic and Early Minoan I and II. Sir Arthur Evans relied on the Egyptologists for the dating of the Egyptian material, but the history of Egyptian stone vessels has progressed considerably since the original study was made of the Cretan material (cf. Sir Flinders Petrie's outline in *Diospolis Parva* with that in his *Prehistoric Egypt*). In *Mycerinus* (appearing about February 1931) I have carried Sir Flinders' series down to dynasty V, and in *Naga-'d-Dêr* III (in the press) to the end of dynasty VI (see also BRUNTON, *Qau and Badari*).

The material for Babylonia recorded by Mr C. L. Woolley is not yet so completely published as that from Knossos, nor have I been able to obtain a complete set of the published reports. I have the first volume of the final report, *Al'Ubaid*, the *Antiquaries Journal*, vol. VIII, no. 1 (kindly lent by Mrs Percy Stout), Mr Woolley's *Sumerians* and *Ur of the Chaldees*, and a series of drawings of 25 stone vessels in the British Museum supplied by Mr O. G. S. Crawford. In *Al'Ubaid*, pls. LXI and LXII give drawings of 41 forms (numbered I-XLI, see also fig. 7-9). In the *Antiquaries Journal*, VIII, pls. IV and V, photographs are shown of eight stone vessels. As a basis I take the 25 forms offered by drawings of vessels in the British Museum and numbered 1-25. Most of these forms are among those in *Al'Ubaid*. The vessels fall into two groups, (1) fourteen vessels which are manifestly not of any Egyptian types known previous to the end of dynasty VI, and (2) eleven which have a similarity to Egyptian forms.

Eight of the un-Egyptian vessels are jars, nos. 11-14, 16-19. These have two types of rim—a flat-topped rim of varying width, undercut in a curve (nos. 11-15, 23) and a rim with two sloping surfaces ('sloping rim') with a flat edge (nos. 16-22). Neither of these rims is

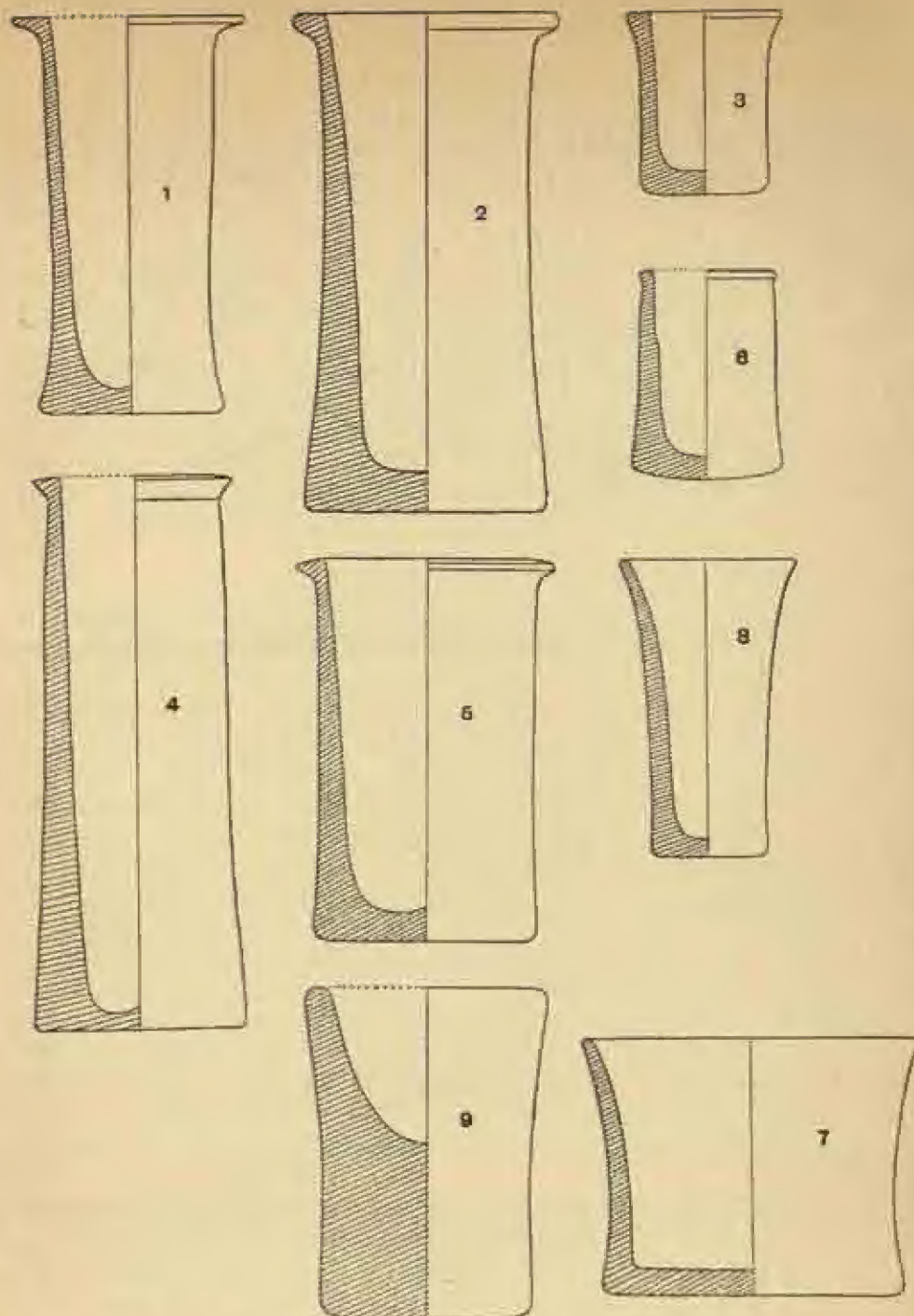


FIG. 2. SUMERIAN CYLINDRICAL JARS OF STONE, NOS. 1-9

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of characteristic Egyptian form such as is found in well-made vessels, but possibly isolated examples might be found in rude degenerate vessels from provincial graves. But both these rims occur in the Sumerian pottery (*Al 'Ubaid*, pls. LV-LX). The flat-topped rim is shown in pottery Types XXXIX, LVI, LXXII-LXXIV; the sloping rim in pottery Types XLI, and XLII, although a sloping topped rim with flat underside is more common (Types XXXV, XXXVI). The un-Egyptian stone vessels were certainly made in workshops situated outside Egypt and, in view of the rims, this workshop was probably in Sumer itself. The Sumerians in the time of these vessels had mastered the technique of stone objects as is shown by the statues, reliefs, etc., and were certainly able to cut stone vessels. They probably brought their better kinds of stone from a distance just as the Egyptians did, and to a certain extent, the Cretans.

The most striking of the vessels with a similarity to Egyptian forms are the cylindrical jars (my Type 1). The type occurs in rather rude forms in the predynastic period but is one of the commonest types of the period of expansion of the industry in dynasties I-IV, when it occurs in four sub-types with many variations. The Sumerian examples present the same two rims as the un-Egyptian vessels, and also a plain rim. A plain rim does occur in Egypt in isolated examples of all periods of the early dynastic corpus, but it is usually flat on top (not rounded) and the examples I have seen have been jars of Type 1c (without cord in relief) which have been broken about the mouth and worked down. The Sumerian examples have heavy rounded edges. I consider that the rims prove that the Sumerian cylindrical jars are from the same shops as the un-Egyptian Sumerian vessels. The Egyptian jars of this form were containers of perfumed oils or ointments for which stone is much better fitted than pottery. The Egyptian type originated, I think, in receptacles which were naturally of a cylindrical form—sections of wooden log, ivory tusk, or horn. The same materials were at the disposal of the Sumerians and I can see no reason for doubting an independent development of this form in Sumer.

A number of other Sumerian vessels show a suggestion of Egyptian forms—the shoulder jar, no. 10; the pans and open bowls (nos. 24, 25, and *Al 'Ubaid*, stone Types VII-XIX, XXI-XXV, XXVIII-XXX, XXXII). But none of these are duplicates of Egyptian types of well-made stone vessels. The general form of the shoulder jar occurs also in pottery with the characteristic Sumerian rims (see *Al 'Ubaid*, pottery Types

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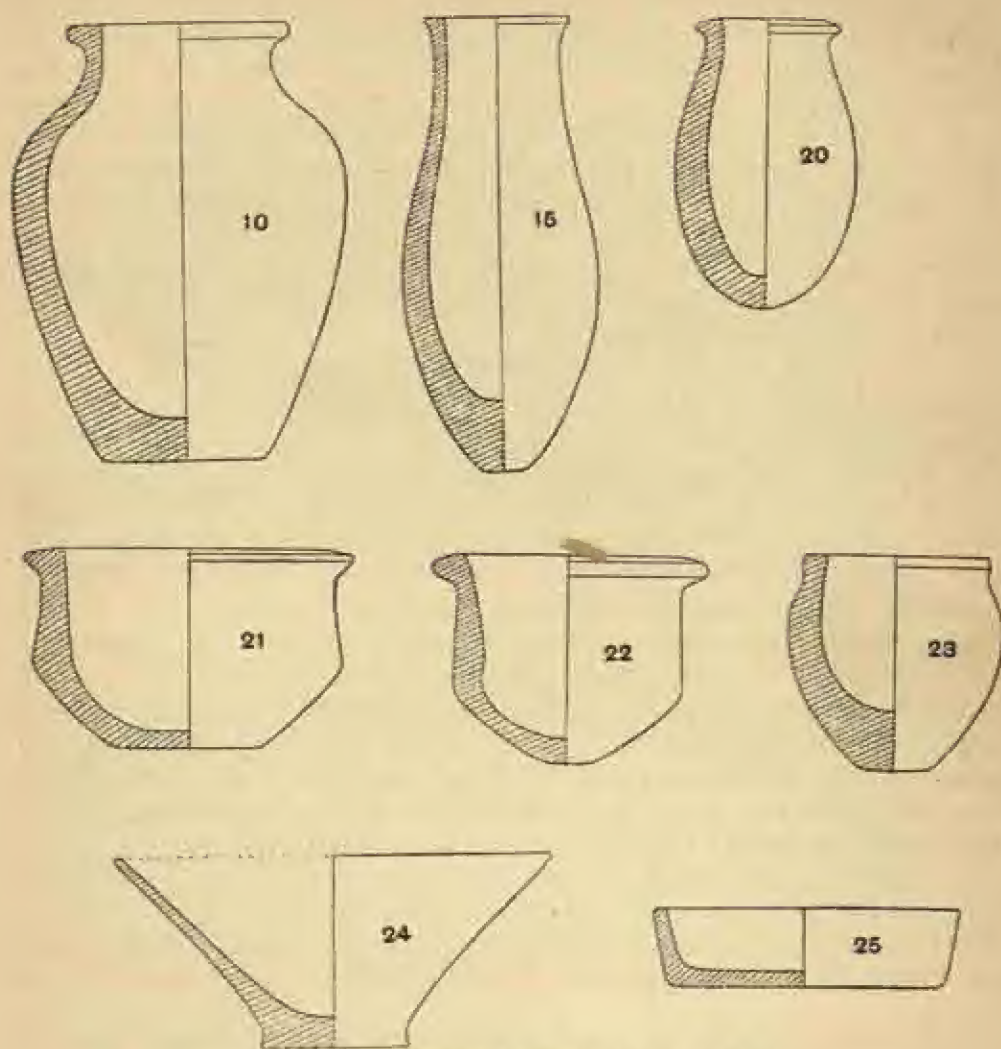


FIG. 3. SUMERIAN STONE VESSELS, NOS. 10, 15, 20-25
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xxii, xli, lviii, and lxxiii). The bowl forms, some of which also occur in pottery, are of such a simple character that they may be found in most cultural fields. The edges, and the heavy walls give them to my eye a distinctly un-Egyptian appearance. Once we admit that the Sumerians had access to a source of supply outside Egypt (probably in Sumer itself), it becomes probable that all the vessels are from the same un-Egyptian source.

Identity of form between the Sumerian stone vessels and the Egyptian stone vessels is clearly lacking. As to the materials, I am in a greater difficulty. Many of them are marked alabaster or calcite, but I find no statement from Mr Woolley that these are the Egyptian varieties of those stones. Mr Lucas, who has seen the examples in the British Museum (through the glass) tells me that he judged them to be of un-Egyptian materials.

The technique has some similarity to the most usual form of Egyptian technique—the boring with a stone. Examples of tube-bored vessels do not seem to occur. As for the stone borer, it may or may not have been a weighted crank-borer like that of the Egyptians.

The conclusion reached from the materials at my disposal is that none of the vessels reported from Ur is of Egyptian origin. They serve no useful purpose in the correlation of the early Sumerian and Egyptian periods.

NOTE

Thanks are due to the Director of the British Museum, to the late Dr H. R. Hall and to Mr C. L. Woolley for facilitating and allowing the publication of the drawings (figs. 1-25) which were specially made for this article; and to the Keeper of the Ashmolean for similar facilities. It has not been possible to publish the latter, but thanks are due both to the Keeper and to Sir Arthur Evans for his help in the matter.—EDITOR:

Noah's Flood*

by MARGARET F. MALIM

DURING the last two years the newspapers have more than once announced with a flourish of headlines that undoubted evidences of the Great Flood had been discovered in Mesopotamia.

The average reader felt quite excited. Noah's Ark had been his earliest Sunday toy, and he had always felt vaguely aggrieved in later years on being told that nowadays learned people considered the Story of the Flood to be merely a myth. Consequently a good many readers eagerly read the articles, which held out a promise of restoring a cherished tale of childhood, only to find themselves involved in technical details of excavations in buried cities belonging to remote civilizations with unpronounceable names of which they had never heard.

It was all too impossibly difficult. The plain man failed to understand what broken pottery had to do with the matter, and it made his head whirl to think that the documents of those early days were written on clay tablets, often badly chipped, in crude characters or even earlier pictorial script, such as the children produce in the kindergarten. Evidently it was only a matter for the experts he concluded ruefully, and gave it up.

But many puzzled people are still asking questions about the recent discoveries, and in order to satisfy their natural curiosity the following simple summary has been put together. It is an attempt to lay before the general reader an account of the manner in which the Story of the Flood has come down to us, only touching on technical details when it is absolutely necessary.

We will begin with the familiar story of Noah in the book of Genesis. Every one can find it for himself in the Bible, and note that

* The dates given in this article must be regarded as approximate only. There are still no fixed and universally accepted dates in years before about 2000 B.C. in any part of the ancient world.—EDITOR.



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Noah was the tenth descendant from Adam ; that he sent out a raven and a dove ; that he offered up a sacrifice on leaving the ark ; that as a reward for his piety the Lord promised that mankind should no more be destroyed by flood.

The Old Testament scriptures were inherited by the Christian Church. Early Christian writers made a study of the writings of Jewish commentators, and were aware that the Babylonians had a story of the Flood closely resembling the story of Noah, but it was always assumed that it had been handed on by the Hebrews, who were carried away into captivity at Babylon. Take, for example, Eusebius, who wrote in A.D. 325. He quotes largely from a history of Babylon written by a Babylonian priest called Berosus in 300 B.C.

Berosus tells a story of Xisuthros, the tenth king of Babylon, (compare Noah, the tenth from Adam) who was warned by the god Cronos of the coming of a flood. He was told to build a ship for his family and friends, and also to include representative beasts and birds ; to supply it with food, and also to write a history of the world and bury it at Sippar. When the flood was abating he sent out birds, which first returned with clay on their feet, and finally came back no more. The ship grounded on a mountain and Xisuthros offered a sacrifice, after which he disappeared, caught up by the gods for his piety. His family were told by a voice to go and unearth the buried history and preserve it.

On comparing this version with the story of Noah, we shall notice that it differs in important details, but the Early Fathers assumed that the Babylonians had evolved a garbled version of the story told them by their Hebrew captives.

So the matter rested, until in 1845 an English explorer, Sir Henry Layard, dug in the ruins of Nineveh, the ancient capital of the Assyrians, and came upon the remains of the library in the palace of Assur-bani-pal. The palace had been burnt and the floor of the library had collapsed, throwing together the thousands of clay tablets with their invaluable inscriptions. Some twenty thousand of the least broken tablets were brought to England, and deciphered. The majority were in the Assyrian language, written in the cuneiform script. Others were in earlier dialects ; some were in picture writing which it was impossible to make out, until further tablets, discovered later, were found to be dictionaries and grammars of these earlier dialects.

Imagine the patience of modern scholars, who have learnt to use dictionaries, not printed on convenient thin paper but incised on clay

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tablets more or less chipped and imperfect. Then let us link up these students with the hard-working scribes of the time of Assur-bani-pal, king of Nineveh, who reigned from 668 to 626 B.C. They must have spent hours in the palace library, compiling dictionaries and grammars of the older dialects of Mesopotamia. They gradually made out the language of the Sumerian people, dating from before 2000 B.C., and wrestled with tablets in the Accadian or Hittite dialects. Considering that the archaic tablets had all been copied by hand and re-copied, it is hardly surprising that a good many errors have crept in, especially with regard to numbers, such as the lengths of the reigns of various dynasties.

Among these Assyrian workers of the seventh century B.C. was a scribe named Sin-liqi-unnini, who compiled a complete version of a long epic poem concerning the wanderings and adventures of a mythical hero, called Gilgamesh. In this we learn that Gilgamesh met in the course of his wanderings an ancestor, called Uta-Napishtim, who had escaped from the Great Flood, and received the gift of eternal life for his piety. He had lived at Shuruppuk, on the banks of the Euphrates, and had been warned by the god Ea to build a ship and to enter with his family and cattle. Some of the details agree more closely with the story of Noah than those in the tale of Xisuthros, for Uta-Napishtim sends out a raven and a dove and, after offering a sacrifice, he receives the divine promise that mankind shall not again be destroyed by flood.

It was the discovery of a fragment of a tablet giving this episode from the story of Gilgamesh, that raised such interest among Biblical students when it was made known to the public in 1872, for it was evident that this version of the Flood story, the details of which so closely resembled the story of Noah, had been written down by the Assyrian scribe in the seventh century B.C., that is to say, before the time of the captivity of the Hebrews in Babylon. Scholars were confronted by the problem of how the Hebrews and the Assyrian scribe could have obtained the story from independent sources.

A more recent study of the tablets from the library of Nineveh, and of others found elsewhere, has revealed various versions of the story, including three tablets in the Accadian dialect, dating from about 2000 B.C., and a fragment in the Sumerian language several centuries older.

It is generally considered that the Hebrews passed on by word of mouth from generation to generation a store of legends, accumulated

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by their ancestors in the days before Terah and his son Abram left Ur of the Chaldees, and wandered West, first to Haran and afterwards towards Palestine. Among these legends was the Story of the Great Flood.

At this point it is as well to state clearly the difference between a myth and a legend. A myth is a tale invented by primitive people to express the observed facts of nature. For instance, the early races had a series of sun myths to express the cycle of the seasons. A legend, on the other hand, is a tale embodying the race-memory of an event that actually occurred in the far past. It may be overlaid with all sorts of apocryphal details, but at the core lies a definite, concrete event.

For half a century, the question has been debated as to whether the Story of the Flood was a myth or a legend; that is to say, whether it ever took place, and if it did, whether it covered the whole earth, or only that portion of it known as 'the world' to the dwellers in Mesopotamia.

The evidence of the world-wide stories of a Flood, from Asia, America and the Malay archipelago has been sifted. Europe has practically none. The stories from India and China as well as from America might well be the product of the race-memory of local floods comparable to the recent disasters caused by the Indus and the Mississippi. Those from the Malay archipelago may tell of tidal waves. In the absence of any geological evidence for an universal flood submerging the whole earth, it is thought that the Great Flood was confined to Mesopotamia.

In 1929 epoch-making discoveries were made by two parties of archaeologists working respectively at Ur and Kish in the Euphrates valley. Deep down under the remains of three or four cities, superimposed one upon another, were found layers of clean, silted clay obviously deposited by a considerable flood. This brings us to the difficult but interesting part of the subject—the evidence of archaeological discoveries. First we have to consider a further series of clay tablets; afterwards the significance of broken pottery.

Mention has already been made of the fragment of a tablet in the Sumerian language, referring to the Flood, and dating from before 2000 B.C. It was discovered at Nippur, a sacred city of the Sumerians. Near by were found other broken tablets giving lists of the kings who ruled in the Sumerian cities of Mesopotamia, and one definitely states that it was written in the fourth or fifth year of Enlil-bani. Since

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his reign comes within the range of history, the date of 2141 B.C. has been assigned to these tablets. The lists were very difficult to decipher until two other important tablets were discovered in another part of Mesopotamia, giving further lists of kings who were stated to have reigned both *before* and after the flood. No attempt will be made to enumerate the names. The lengths of the dynasties are impossible; in two instances they are given as 42,300 and 28,800 years! It is noteworthy, however, that the names mentioned on the three tablets more or less correspond.

The important sentence on the chief tablet is: *The Deluge came up*: it is inserted in the middle of the list of dynasties. It clearly asserts the fact of a Great Flood, which divided the dynasties from one another.

The first dynasty to rule after the Flood was that of Kish. Then came the first dynasty of Erech. In this list we encounter no less a person than Gilgamesh, hero of the epic poem, as the fifth king. Next came the first dynasty of Ur, the first king of which had the formidable name of Mes-anni-padda, and the second dynasty of Kish, of Erech and of Ur respectively. By this time, the numbers given for the length of the dynasties are becoming more reasonable: for instance, 136 years for the reigns of six kings.

The extraordinary lengths of the reigns led to it being thought that the kings named were mythical personages, but in 1923 the ruins of a temple were unearthed at Tell el 'Ubaid, four miles from Ur, and there an inscription was found giving the name of the god to whom it was dedicated, and the name of the builder, A-anni-padda, son of Mes-anni-padda, king of Ur. This discovery made it clear that the Mes-anni-padda mentioned in the list as first king of the first dynasty of Ur was a real person.

One explanation for the absurd figures given for the earlier reigns is that copyists working about 2000 B.C. may have had difficulty in reading the pictorial scripts.

Before referring to the further discoveries of 1929, it is necessary to consider the evidence of broken pottery. The art of making earthenware pots came down from very early times, before people had learnt to smelt metals for tools and weapons. Good pottery decorated with simple patterns is found in the tombs and rubbish-heaps of races who had only flint tools, and much attention has been given in recent years to the classification, according to shape and forms

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of decoration, of pottery found on the sites of early settlements in Mesopotamia. The inhabitants of Ur about 3900 B.C. had obviously no system of scavenging. Every one threw his household refuse over the city wall, and did it so thoroughly during the course of centuries that an enormous rubbish dump was formed, through which Mr C. L. Woolley, Director of the Expedition sent by the British Museum and the University of Pennsylvania, sank shafts in 1929 and made most surprising discoveries. A thin ware, buff with black designs, has been found in very early settlements, and other pottery of a more elaborate shape and polychrome decoration in later ones. Specimens of the earlier buff and black ware have been found in Persia and Baluchistan, at Susa and also near Ur. The first settlement at Susa is now considered by some to date from 5000-4500 B.C., and it had already been surmised that the people who used this particular ware might be the 'dwellers before the Flood', even before the most recent discoveries had produced confirmation.

In 1929 the excavators at Ur found first the remains of a flourishing city of the third dynasty, dating from 2400-2300 B.C. Below this, was another city with many graves containing not only elaborate ornaments but inscriptions referring to Mes-anni-padda (whom we have already mentioned) and his queen, Nin-Dumu-Nin, and since Mes-anni-padda's name occurs in the list of kings of the first dynasty of Ur, the city is considered to belong to that period. Then came the colossal rubbish-dump, which was deep enough to allow large pits to be sunk for the tombs of kings of an earlier race. Similar tombs of kings buried with the same rites as those observed at Ur were found at Kish, and it is assumed that these date from the time of the first dynasty of Kish, and that Ur may then have been ruled by a vice-regent.

Mr Woolley continued to sink his shaft still deeper in the great rubbish-dump at Ur, and finally came to a layer of solid clean clay, eight feet thick. His workmen thought they had reached virgin soil, but he persisted, and found in the lower strata evidences of earlier settlers, who used flint tools and pottery both plain and painted. What then was the explanation of this layer of clean, unstratified clay, which divided the later races from the early neolithic settlers with their flint tools and black painted ware? Clearly it must have been the Great Flood, mentioned in the list of kings and in the folklore of the dwellers in Mesopotamia.

By piecing together the evidence of geology, pottery and the lists

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of kings, the Great Flood has been dated between 4250 and 4200 B.C., and a tentative outline of that period may be given.

Before the Flood, various groups of neolithic people lived in reed huts at Kish, using polychrome pottery. Others came from further East to Susa, Eridu, Tell el 'Ubaid and Ur, who made use of the buff and black pottery. Then the first group of Sumerians arrived, from where no one knows, bringing the rudiments of a higher civilization in the form of attempts at pictorial script, and possibly the art of making bricks.

The Great Flood drowned all the dwellers in the valley of the Euphrates, except the chief of Shuruppak, called Uta-Napishtim, Xisuthros or Noah, who escaped with his family and birds and beasts in the Ark. Later, a further influx of Sumerians may have occupied the deserted valley, and the first dynasty of Kish may have built the first brick city there. During the long reign of this dynasty the inhabitants of Ur were accumulating the great rubbish-heap which was found in 1929.

Kharga Oasis

by G. CATON-THOMPSON

THESE brief notes, written shortly after our return from a first season's work on the prehistory and geology of the Kharga Oasis under the aegis of the Royal Anthropological Institute, are no more than a background for the illustrations (figs. 1-11), due to our good fortune in being the first expedition in Egypt to have the use, for a whole fortnight, of an aeroplane placed without restriction for scientific service in field-work.

Readers of *ANTIQUITY* will not need to be reminded of the debt archaeology owes to its Editor for his persistent advocacy of aerial co-operation, insisted upon long before the value of this new aid in archaeological research had been generally realized even by those professionally interested, and demonstrated by him repeatedly with a wealth of beautiful illustration.

Professional aerial survey and photography have now reached a very high standard: but whilst it is established that in certain types of country their employment is of incalculable assistance to field-archaeology, it is seldom available for use by the average field-worker. The commercial rates, as I found when arranging for the Zimbabwe survey in 1929 on behalf of the British Association,¹ are prohibitive for the average expedition, whose scanty funds are raised by heroic effort only, and require the elimination of all but the bare necessities of transport, material and wages; whilst the co-operation of the R.A.F., even be they within range, cannot for various reasons be relied upon, and in any case precludes the unofficial archaeologist (particularly if a woman) from accompanying the flight, whereby more than half the value is lost.

When, therefore, last summer, I was planning the Kharga expedition—a region where, on a brief visit in 1928, I had observed that

¹ The South African Air Force saved the situation by consenting to do the work for running expenses only—a matter of £75. See G. Caton-Thompson, *The Zimbabwe Culture*, pp. v and vi, and pls. 1, II, XXII, XXIII, XXVII, and *ANTIQUITY*, Dec. 1929 'Zimbabwe', pls. 1 and II.

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air-survey would be invaluable—I was audacious enough to toy with the thought of private assistance, which would be free from restrictions and official difficulties and delays. Lady Bailey entered with characteristic enthusiasm into my scheme, and it remained but to get release from the official embargo on civilian aviation over Egyptian territory. The goodwill and necessary permission of the Egyptian and British authorities were eventually obtained; and Lady Bailey flew out from England alone, and landed in a halo of dust, beside our desert camp on 17 February last. The early hours of the mornings of her visit were occupied, with one or two exceptions due to bad conditions, in making observations both archaeological and geological over the great Depression and its surrounding desert.

The machine was an ordinary Puss-Moth, with enclosed cabin, which enabled the observer not only to talk with the pilot, but also to make notes and follow the map in complete comfort. The photographs were taken by Lady Bailey herself out of the forward windows, using a Williamson Pistol Aircraft camera, with panchromatic film-pack. The results, five of which are published here, must be judged for what they are—first amateur attempts.

The value of aerial observation on bare desert is great. Not only have we gained a general knowledge of the 1800 square miles of our concession which many seasons of ordinary field-work would not have given, but we have obtained for use next season valuable information as to where the main centres of archaeological interest lie; we also know where *not* to look for them. Miss Gardner found the geological reconnaissance to be as profitable as the archaeological one was to me, and Mr Little, Director of the Geological Survey of Egypt, who was in Kharga at the time, was equally impressed by what could be seen of vaguely mapped regions in a two hours' flight.

Kharga (the 'Inner' Oasis), the largest though by no means the most prosperous of the five principal Egyptian Oases, is separated from the Upper Egyptian Nile Valley by a broad strip of plateau—the Libyan Desert Plateau—averaging 130 miles in width, and terrible in its desolation. This we traversed on foot, tracing, with growing excitement, the occurrence of palaeolithic, Badarian, and Faiyum cultural elements right across.

The oasis, ninety-nine per cent. of which is desert, the rest being scattered fertile patches around wells, is not geographically an isolated unit, but forms the eastern part of an enormous desert depression, lying over 1000 feet below the level of the Libyan Plateau, scooped out

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in Eocene and Upper Cretaceous rocks by erosive agencies of still disputed age and character. The western 'fertile' areas are known collectively as Dakhla (the 'Outer') Oasis.

No topographical barrier other than four days' march of waterless desert separates the two oases, both contained within this irregularly-shaped depression; but their virtual isolation from each other has caused each to develop—or stagnate—on individual lines. Of the two, Dakhla, though 75 miles further from the Nile Valley, is now at any rate far the more progressive, with a population of over 18,000 souls; whereas Kharga, 130 miles only from Luxor and connected with the Valley by a narrow-gauge railway and weekly train, can hardly support half that number.

The prosperity of an oasis community being entirely dependent on its activity in maintaining and extending its precious water supply, it is not surprising to find that in this respect Dakhla is far ahead of Kharga. That this has always been the case is not however borne out by the buildings of antiquity still standing. In these Kharga is more richly provided than Dakhla; and though it is true that the majority are outpost stations of sun-dried brick, such as are shown in figs. 3 and 5 guarding the main caravan routes for which Kharga is the more important junction, yet our aerial inspection of the now desert ground of both oases showed extensive and widely distributed areas of ancient cultivation and mining activities in Kharga, which were not observed in an equal degree in Dakhla.

The history of these oases is very little known. By allusion we know that they belonged—nominally at any rate—to Egypt in the Middle Kingdom, and during the New Empire they paid tribute to their masters. But in the oases themselves—perhaps because they have been little explored—nothing has yet been discovered of dynastic antiquity greater than the xxviii (Persian) dynasty 525–338 B.C. With the exception however of a solitary temple of that date,² ruins of the Classical Period (332 B.C. to A.D. 640) form the remainder of visible buildings.

The main outline of the geology of the water supply of the Oases has been established by those two great pioneers of desert geology, Dr John Ball³ and Mr H. J. L. Beadnell,⁴ and the archaeologist seeking

² Our air photograph of this, the Temple of Hibis, was published by *The Times*, 13 April 1931, and the *Illustrated London News*, 2 May, 1931.

³ *Kharga Oasis: its topography and geology*. Geological Survey Report 1899.

⁴ *Dakhla Oasis: its topography and geology*. Geological Survey Report 1899.

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to sketch in on a blank sheet the prehistoric and early historic picture of the Depression will be wise to attend to it, for water-colour seems likely to be his medium. Two water-bearing strata have been distinguished—an upper, named the Surface-water Sandstone, which has a wide outcrop; and a lower, the Artesian-water Sandstone, which can be reached by bore-holes only at not less than 80 metres below the surface. The water carried by these two beds of porous Cretaceous sandstone is believed to have its origin in the rain-belt of Equatorial Africa.

The great majority of the existing flowing wells, both ancient and modern, derive their supplies from the water under pressure of the lower series. By whom the first wells in the oases were sunk is still unknown: it is easier to call them Roman, as is usually done, than to prove it, and I cannot dismiss the suspicion that closer inquiry may show Persian handiwork, particularly in the great subterranean aqueducts to which I shall refer. In Dakhla, over 400 pre-Arab wells are still in use, and in Kharga nearly all the existing ones are of ancient boring, besides the large numbers which have become derelict through man's neglect (several are seen in fig. 1), or have been forcibly abandoned under pressure from the irresistible seas of sand (fig. 9).

But whilst the evidence shows that in some still-undefined period wells tapping the deep-seated artesian water were the rule, exceptions were made when this source of supply was unobtainable, and the Surface-water Sandstone was also utilized. Particularly is this the case in those higher lying districts near the base of the scarps, where the water has been carried to the remote outpost stations referred to in long subterranean rock-cut aqueducts as much as 175 feet below the surface, whose perilous exploration Mr Beadnell so vividly describes.⁴

The clue to the positions of these aqueducts is given by the upthrow from, or openings of, narrow vertical shafts which connect them with the surface, sunk doubtless as much for ventilation as for the removal of the excavated material. Considering the labour required in the cutting of each of these shafts, the closeness with which they were spaced is almost incredible: Mr Beadnell cites a row over two kilometres ($1\frac{1}{4}$ miles) in length where the spacing was between 19–20 metres (61–64 ft.)—over 150 shafts in all. The lines of these subterranean aqueducts were spotted with wonderful ease from the air, and several lengths will be seen on fig. 2, serving, in what is now complete desert,

⁴ *An Egyptian Oasis*, chap. xii.

PLATE I



FIG. 1. AIR PHOTOGRAPH (1000 ft.) SHOWING ANCIENT AND MODERN CULTIVATION AND IRRIGATION NORTH OF KHARGA VILLAGE
The clustered dots at the top are the domed tents of the Early Christian Noudjeds

Pl. The Rev. Lady Bailey

PLATE II



FIG. 2. AIR PHOTOGRAPH (2000 ft.) OF ROMAN OUTPOST OF QASR GYB, KHAKKA DEPRESSION
showing apophylls and shale
Pg. The Hist. Lady Bailey

PLATE III

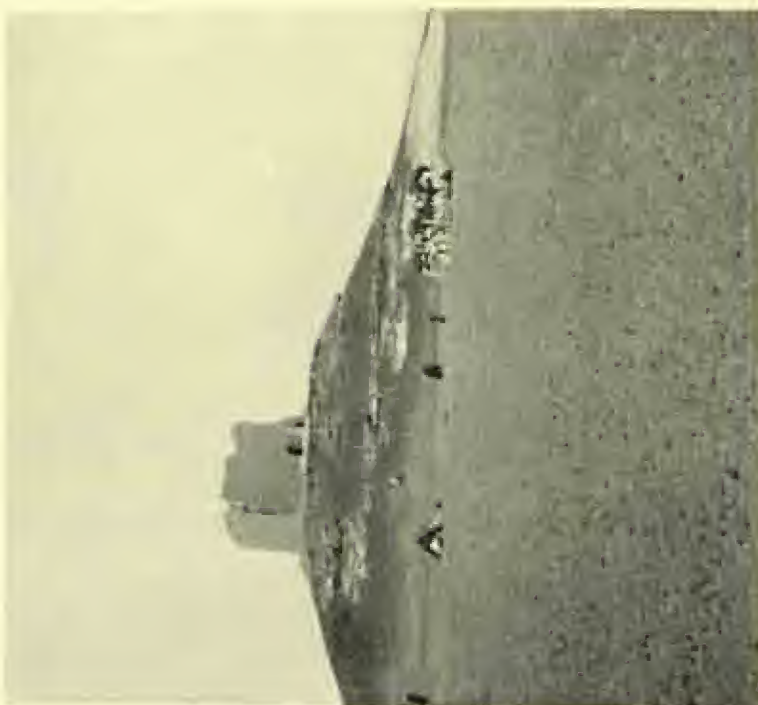


FIG. 3. QASH GYD, EXTERIOR
with the B.A.I. Expedition at base
P. L. W. Gardner



FIG. 4. QASH GYD, INTERIOR
showing barrel-vaulted chambers of mud-brick
P. L. W. Gardner

PLATE IV



FIG. 4. GORN EL GENNAH, KHARGA DEPRESSION
Shafts of subterranean aqueduct, over 200 ft. in depth
Pl. E. W. Gardner



FIG. 5. DEIR EL GENNAHMA: ROMAN OUTPOST FORTRESS IN
KHARGA DEPRESSION
R.A.L. Eschschmidt's Camp in foreground
Pl. E. W. Gardner

PLATE V



FIG. 7. AN OASIS IN KHARGA DEPRESSION: overflow pool from Ain Kharrun, threatened by sand-dune
Ph. G. Caton-Thompson



FIG. 8. KHARGA DEPRESSION: undisturbed floor (impervious) by a "fossil" spring. Scarp in distance
Ph. G. Caton-Thompson

PLATE VI



FIG. 9. AIR PHOTOGRAPH (4000 ft.) OF A SAND-SWAMPED OASIS IN THE GREAT DUNE-BELT, SOUTHWEST KHARSA
/9, The Hoo, Lady Bailey

PLATE VII



FIG. 20. AIR PHOTOGRAPH OF QASR GHUATA, A PTOLEMAIC TEMPLE IN KHARGA DEPRESSION
showing ancient and modern irrigation channels
P/a. The Hon. Lady Duff

PLATE VIII



FIG. 11. AIR PHOTOGRAPH OF DIME (1900 B.), NORTHERN FAYUM DESERT

The Soknopaiou Nesos of Classical Times, with irrigation embankments

Fig. The Hore, Lady Bailey

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the little outpost building of Qasr Gyb, seen on the prominent mound in the air-photograph, and in figs. 3 and 4 from the ground. The structure, as well as the sherds picked up point to a late Roman date for this place. Traces of ancient cultivation and mineral workings can be made out in the vicinity, and the position seems designed to guard the northern exit from the Depression by the Darb el Arbain. Here caravans would get their last water and grazing before reaching Assiut, about 100 miles distant.

The openings to the shafts of another subterranean water system 35 miles south of Gyb, first spotted from the air, are seen in fig. 6. Here, though we plumbed one to a depth of 82 metres (261½ ft.) without reaching bottom, the openings are set even closer together. In this case, however, the water-tunnel is almost certainly a short one. Another row, not yet visited on foot, is prominent in fig. 1 but whether these mounds will prove to indicate a subterranean channel is not yet clear; surface irrigation as still practised, and seen in the air photograph fig. 10, may create something not dissimilar; for in the photograph we see two wells, whose flow is canalized for some miles across the desert, each creating its own little thread of 'oasis', and whose periodic dredging doubtless causes a long line of mounds. The square outline of the Ptolemaic temple of Qasr Ghuata lies nearby, and that the same well was flowing over 2000 years ago is shown by the rectangle of irrigation mounds which borders it.

Some ancient surface irrigation channels were faced with stone: one such I cleared of sand for a short distance, and found it to be little more than a ditch whose sides were held in place by undressed, unmortared stone.

The relation of prehistoric man to the water-supply has already proved, in the lapse of one short season, an exciting study. We are unable to agree with the view that Kharga Depression, at any time within the span of man's appearance in it, contained a lake or continuous marsh; and the deposits which have been thought to prove it appear to us to be of composite origin due largely to the local overflow from springs. A tour of the Depression by air confirms this view, already reached by ground work.

Where then did palaeolithic and neolithic man, whose implements lie in incredible numbers on the scarp and in the Depression, obtain his water? The artesian water is inaccessible to all but deep bores, and on the existing evidence must be dismissed, in palaeolithic times at all events, as a possible source of supply.

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Yet at first sight the only alternative, in the absence of a lake, is the Surface-water Sandstone bed, a source which, without the aid of considerable hydraulic skill, now lies too stagnant in its own stratum to discharge under pressure, or accumulate in more than small, isolated pools, in rare, tectonically favourable spots. We have begun to find the true explanation.

A noticeable feature of the oasis floor are curious crater-like mounds of hardened sand-rock, tending to cap ridges. One such ridge, marked by a crest of 'craters' attracted my attention owing to the profusion of beautiful flint implements, both of Mousterian type, and of Faiyum neolithic affinities, upon it (fig. 8), each type confined more or less to its own half of the ridge. The palaeoliths—cores and flakes of china-white patination totally unlike anything I had seen in Egypt except *in situ*, were concentrated around the base of a 'crater'. A trench across it disclosed a 'floor' of palaeoliths deeply buried, and further sections showed the 'crater' to be spring deposits of Pleistocene age, 9 metres in depth, of alternating clays, loams and pure white sands. The character of deposition suggests successive phases of quiescence and discharge under terrific pressure, the loam beds indicating a placid pool fringed by reeds and vegetation, the comminuted and distorted clays the periods of violent activity. The water, almost without doubt, was seated in the Surface-water Sandstone, and we have thus gained an insight into the capacity of this stratum to discharge under pressure in Pleistocene times.

The associated culture, which is figured provisionally in *Man*, May 1931, plate E, is notable as belonging apparently to a branch of the Aterien of French North Africa.

Dissection of another 'fossil' spring at the other end of the ridge disclosed a later Stone Age culture, similarly deeply buried. We are thus already at grips with the prehistoric water-problem.

Experience teaches the field-archaeologist to be a cautious creature: nevertheless, if restrained speculation be permissible, I see in the Pleistocene 'fossil' spring deposits of Kharga Oasis, with their local overflows, just such an environment and circumstance as might be held to have led man, the palaeolithic hunter, to become man, the 'neolithic' herder and cultivator.

Notes and News

A NEOLITHIC VILLAGE NEAR COLOGNE

We print below a translation (by Dr Cecil Curwen) of the first report* on the excavation of a neolithic village in the outskirts of Cologne. It belongs to the band-keramik culture, and although so far no startling or unusual features have been observed, it is to be hoped that it may be possible to excavate it completely. The work is being carried out with the utmost care and thoroughness by the officers of the Roman department of the Wallraf-Richartz Museum, Cologne.

In the autumn of 1928 some dark occupation-sites containing shards of band-pottery were cut into during alterations in the district between Dürener Strasse, Militär-Ringstrasse and the Frechener Brook, west of Lindenthal, Cologne. The discovery appeared to be of such importance that I immediately raised a protest against the removal of the site of the discovery and the projected complete demolition of it for obtaining soil for the new Botanical Garden. However, after various difficulties it was possible to begin the scientific exploration of the site on 1 August 1930.

Expectations were not disappointed, but were even excelled. For it was a question of nothing less than a complete village with its numerous huts, the whole surrounded by a fortification. By far the commonest ground-plan is the so-called curve-complex of kidney-shape, with depressions of varying depth in the floor, and of varying circumference due partly to much later enlargements and additions to the buildings. While elsewhere only very few post-holes have been found in connexion with such ground-plans, here they are freely established. This much is certain, that we are dealing with actual hut-sites. Moreover, isolated rectangular buildings also occur, as for instance a magnificent building over 66 feet (20 m.) long with post-holes in the interior and beside both its longer sides; this lies in the west part, immediately beside the ditch. In its interior, however, neither a hearth-place nor, in general, relics

* Published in *Germania*, Jahr xv, heft 1 (Jan. 1931), pp. 49, 50, by Fritz Fremersdorf. Plan of site so far as at present excavated.

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of occupation are forthcoming. So far it is already to be observed that the ditch respects this building. Round the whole lies a ditch about 17 feet wide (5 m.) and 7 feet deep (2 m.), behind which there follows at a greater distance a palisade which is recognized by narrow dark streaks with posts extending in front of them. In the filling of the ditch, and of course immediately above the bottom, shards of band-pottery have been found, so that the ditch may be considered to be contemporary with the settlement. For the hut-sides contained a mass of pottery, smooth or decorated in various ways with band-patterns; also flint implements, simple querns, animal bones, and isolated pieces of burnt daub. In more than one case cellars or rubbish-pits have been found.

What the plan also shows is its splendid state of preservation. It seems to be conditioned or at least favoured by a covering stratum about 20 inches (50 cm.) thick, which makes a definite contrast and lies above the occupation level and below the humus; possibly this is a deposit left by the neighbouring Frechener Brook. With regard to the technique of the excavation it may be said that we clear long strips, 23 feet (7 m.) wide down to the beginning of the occupation level, and then make a smooth surface with the help of specially prepared scrapers. The dark spots of changed colour then show up with very great distinctness, so that they can even be photographed. All hut-sites were completely shown up for establishing the nature of their pits, and therewith accurately explored for their contents. Post-holes were without exception opened up; once in order to determine them as such with certainty, and then also to determine whether the posts were arranged in pairs in an upright or oblique position; hitherto they have been found to be exclusively vertical.

The fact is important that hitherto only sporadic remains were found belonging to a later period, as for instance some rubbish-pits without post-holes with Hallstatt shards, also larger post-holes which are arranged in a rectangular plan; as the latter never contain any kind of relics of occupation they may well be looked upon as store-houses. If one takes into consideration that the contents of the huts in pottery is not very rich, the assumption is perhaps justified that this village was only occupied for a short time. Its extent from east to west amounts to 660 feet (200 m.); from north to south it can be provisionally estimated as amounting to at least 500 feet (150 m.). Up to the present about 4200 square metres of the area have been systematically explored.

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Here we have the very rare case that the entire plan can be recovered, as it lies in the open country, and the advantageous situation guarantees an uninterrupted acquisition of the ground-plan of the huts. Very gratifying is the extensive support hitherto received through Dr Adenauer, the chief burgomaster, who out of his management fund placed at our disposal the means of paying for scientific assistance in the continuous superintendence of the work. Further, thanks are due to Burgomaster Dr Schwering, the leader of the town's Welfare Committee, for the rapid progress of the work as a result of the grant of a greater number of free emergency workmen.

The object of this short report is before all to draw the attention of fellow-students in excavation, and to invite them to visit us. The large rectangular building by the western ditch will be kept open as a preliminary; besides, in the next few months it will always be possible to see larger continuous areas, either after being uncovered and before being explored, or after the working out of the occupation level and thus after the completion of the exploration. In the office of the Roman section in the museum is a small selection of the finds forming a representative collection. As for the rest, Dr Werner Buttler, to whom the local charge of the excavation is assigned, will soon report on its progress here.

GOODWIN SANDS AGAIN

We are indebted to one of our readers, Miss ALICE D. GREENWOOD, for pointing out that the story of Goodwin Sands and Tenterden steeple originated in the middle of the 16th century. Latimer referred to it in his last sermon, preached before Edward VI in 1550, and there is a graphic record in the 'Workes' of Sir Thomas More, printed in 1557, which we give below.* We would point out that, although Tenterden has connexions with Thanet both by name and custom, the story rings true of the English rustic, and is probably the fountain-head. As our correspondent points out, Sir Thomas More most likely encountered and cross-examined the 'old father' as a witness before the commission appointed to enquire into the cause of the decay of Sandwich haven.

'And nowe where thei laie for a prooffe, that God were not contented wyth battayle made againste infidels, the losse and mynyshement

* From 'The workes of Sir Thomas Moore', 1557 [Bodl. reference, Douce M.M. 398]: book IV, chapter 14, p. 277.

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of Christendome synce that guyse beganne, they fare as dyd once an olde sage father fole [sic] in Kente at suche tyme as divers men of worshippe assembled olde folke of the countrey to commune and devyse aboute the amendement of Sandewyche haven. At whiche tyme as they beganne fyrste to ensearche by reason and by the reporte of olde menne there about, what thing had bene the occasion that so good an haven was in so fewe yeares so sore decayed, and suche sandes rysen, and such shalowe flattes made therwith, that right small vessels had now muche worke to come in at dyvers tydes, where great shippes wer within fewe yeres passed accustomed to ryde without difficultie, and some laying the fault to Goodwyn sandes, some to the landes Inned by dyvers owners in the Isle of tenate out of the chanell, in which the sea was wont to compasse the Isle and bryng the vessels rounde about it, whose course at the ebbe was wont to scoure the haven, whiche now the Sea excluded thence, for lack of such course and scouryng is choked up with sande, as they thus alledged, divers men, divers causes. There starte up one good old father and said, ye masters say every man what he wil, cha marked this matter wel as som other. And by god I wote how it waxed nought well ynough. For I knewe it good, and have marked so chawe, whan it began to waxe worse. And what hath hurt it good father, quod the gentlemen? By my fayth maisters quod he, yonder same tenterden steple and nothyng els, that by the masse chalde twere a faire fish pole. Why hath the steple hurt the haven good father quod they? Nay byr Ladye maisters quod he, yche cannot tell you well why, but chote well it hath. For by God I knew it a good haven til that steple was bylded, And by the mary masse, cha marked it well, it never throve since. And thus wisely spake these holi Lutheranes, which sowyng scismes and sedycions among christen people, laye the losse thereof to the withstanding of the Turkes invasion, and the resistyng of his malice, where they should rather yf thei had any reason in theyr heades, lay it to the contrary'.

SIR AUREL STEIN'S DISCOVERIES IN CENTRAL ASIA

An exhibition has been held at India House, Aldwych, London, of a collection of textile remnants recovered from desert soil on his third Central-Asian journey in 1913-16 by Sir Aurel Stein, the famous explorer and archaeologist, and which belongs to the Government of India.

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Of the more important textile fragments from the expedition shown at the British Museum in 1925, some have already been returned to New Delhi. The recent exhibition comprised the residue of the tissues then shown, together with a further selection of fabrics which, owing to their perished and fragile condition, it has not yet been possible to display. All this material has now, by order of the Government of India, been as far as practicable restored and mounted and will also be returned to India very shortly.

The earlier group of exhibits, assigned by Sir Aurel Stein to a period extending from the middle of the 1st century B.C. to about the first third of the 2nd century A.D., *i.e.* to the period of the Han dynasty, was excavated from grave-pits in a ruined cemetery at a site of what was once the Lou-lan territory and is now part of the Lop desert. In his introduction to 'Ancient Chinese Figured Silks', a paper published in the *Burlington Magazine* in 1920, in which Mr F. H. Andrews, late principal of the Kashmir Technical Institute at Srinagar, discusses the materials, methods of weaving, and character of the designs of certain especially interesting silks found at this site, the explorer claims that these fabrics represent the oldest surviving examples so far known of the Chinese silk industry and textile art. Such abundance of textile remains, so Sir Aurel Stein tells us in his official report on his third Central-Asian journey (*Innermost Asia*, Clarendon Press, Oxford, 1928), we owe to the Chinese custom of bandaging the dead in closely wound rags of old clothing. These tattered remnants rarely give a clue to the character of the particular garment to which they belonged, but their technical and artistic interest is great and their state of preservation wonderful. Silks, patterned and plain, predominated, but fabrics of wool and cotton or hemp were also found. Particularly remarkable are a number of fragments of knotted pile carpet, worked in a variety of colours, and differing neither in appearance nor in weave from the carpet of today.

The second group, which dates from the seventh to about the fifteenth century A.D., consists mainly of silks from tombs of the Astana cemeteries in the Turfan district. These Astana silks, in contrast with the Lou-lan ones, so robust in colour and purely Chinese in conception, give evidence of contact with Western taste in design. Their range of colour is wider and their pattern inclines to repetition, both vertically and horizontally, of a relatively small unit of design. The damasks, striped and diapered silks, silk tapestry, and gauzes of this group, included some striking fragments from Khara-khoto, the famous Etzina of

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Marco Polo, as well as some remnants of printed silk produced by a similar process to the modern 'Batik' work. The work of restoring and mounting was entrusted by the Government of India to Miss Joan Joshua, who has, since 1924, assisted Sir Aurel Stein in various literary and artistic capacities.

PHOTOGRAPHING ARCHAEOLOGICAL FINDS

MR ERNEST MACKAY, of the India Archaeological Survey, sends the following note from Mohenjo-Daro, Sind :—

Most archaeologists, and especially those in the field abroad, soon realize that if shadows are to be obviated they must photograph their finds on glass from above. This method is also useful when the shapes of the objects to be photographed preclude their being supported in a vertical position.

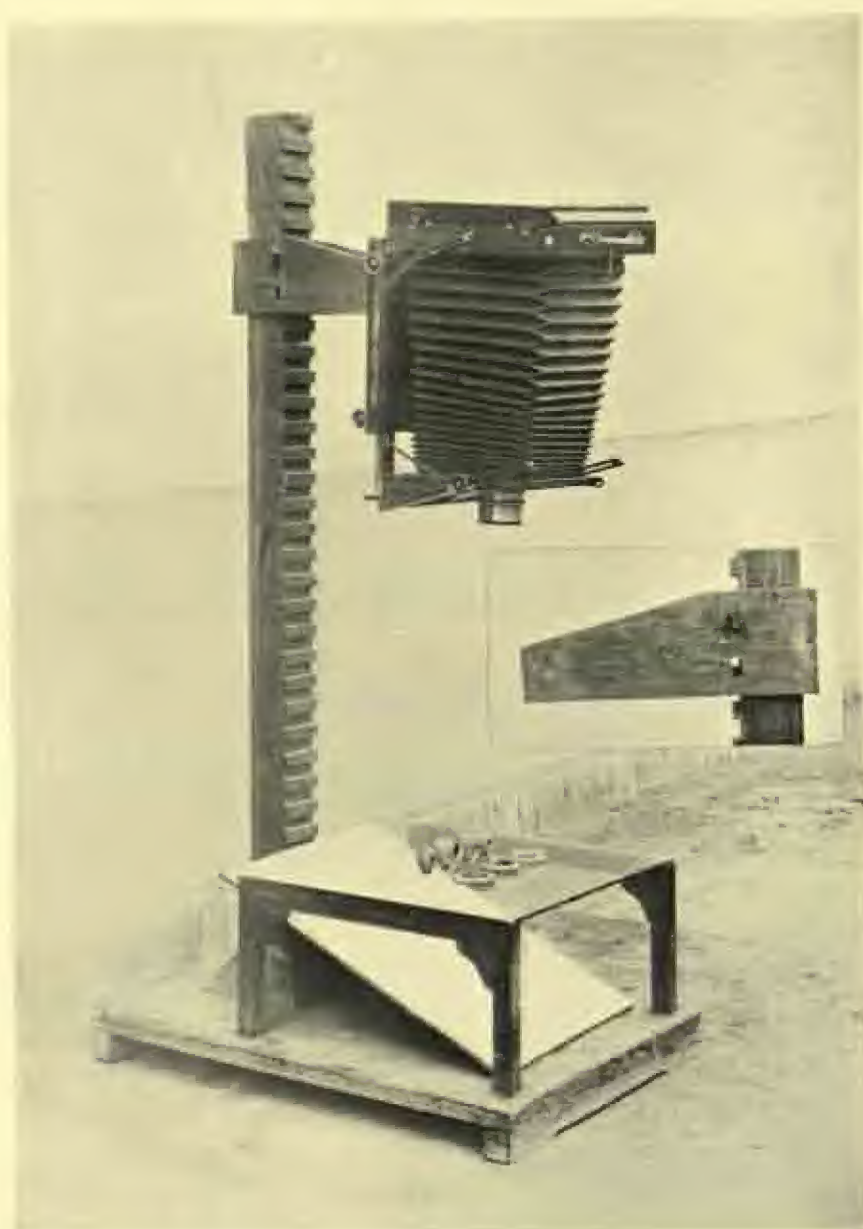
There are many pieces of apparatus on the market for this class of photography, but they are expensive and liable to get out of order at critical moments or far from any means of repair.

With these difficulties in mind, I have devised a simple stand that is capable of doing a great deal of useful work. The material of which it is made can be procured anywhere, and even a comparatively unskilled native carpenter can make it.

The photograph shows a post 6 ft. 2 ins. high fixed by an incut step to a base 3 ft. 4 ins. by 3 ft. 2 ins. in size. The post is 4 ins. square and can easily be removed from the base if desired. Here we have had the post to fit rather loosely in the stand so as to allow for expansion during the monsoon, but a wedge between the post and base makes it quite rigid.

Down the front of the post square-cut slots are made, at intervals of 1 in., each 1 in. high by $\frac{1}{2}$ in. deep. These slots are preferably cut in the post, but they can be made by fastening slips of wood 1 in. wide and $\frac{1}{2}$ in. thick to the post at the proper distance of 1 in. apart. I prefer the slots to be cut as being stronger, and also because they are less trouble to make in this way.

The open frame-like arrangement to which the camera is fastened in the usual way easily slides up and down the post. On each side of it holes are cut for the reception of a pin, each of which measures 1 in. high and $\frac{1}{2}$ in. wide to correspond with the slots on the post. If there is only one hole in each side of the frame, the operator can adjust his camera at intervals of one inch. But if two holes, one below the other,



APPARATUS FOR PHOTOGRAPHING ARCHAEOLOGICAL FINDS

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be cut at a distance of $\frac{1}{2}$ in. or preferably for strength $1\frac{1}{2}$ ins. apart, as shown in the photograph, the removal of the pin from the upper to the lower slot will bring down the range of the camera to within half an inch. By providing three or even more slots, the adjustment of the camera can be brought down to a quarter of an inch or even less. I find that with the modern lens it is only necessary to be able to move the camera by half inches and that a small stop will do the rest.

The rectangular pin by means of which the sliding frame is engaged with the slots in the posts measures a trifle less than 1 in. by $\frac{1}{2}$ in. To allow of expansion in wet weather our frame also is slightly larger than it need be; but a small easily removable wedge prevents shake. With this apparatus, it may be added, it is quite impossible for the box ever to become accidentally loose so that any damage to the camera, through slipping, is obviated.

The post can be marked so that the frame can at once be set to give the desired degree of enlargement or reduction. For convenience in transport, the supports upon which the plate glass rests can be removed, so that they can be packed conveniently together with post, stand, and sliding frame.

This simple piece of apparatus is in constant use in our excavation camp and elsewhere, and it has never let us or itself down.

NIEDERMENDIG LAVA ROCK NEAR AVEBURY

Mrs M. E. CUNNINGTON sends us the following note :—

It may be remembered that the Kennet avenue at Avebury, as described by Aubrey and Stukeley, ended at two rings of standing stones on Overton Hill. According to Stukeley the rings were known locally as 'the Sanctuary'; he records their final destruction in the year 1723. Since then even the exact site had been lost until it was re-discovered last summer (1930) and the site excavated.

The holes in which the two concentric circles of stones had stood were found, and quite unexpectedly six rings of holes, concentric with the stone holes, which once held timber posts.

The pottery found consists of fragments of West Kennet long-barrow type and of beakers. A beaker was found with the only burial on the site. There can be little doubt, therefore, that the circles were erected in the Early Bronze Age, apparently at the period of overlap of the cultures of the long barrow and beaker people.

The evidence suggests that the stone circles were not contemporary

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with, but rather later than those of timber. The plan of the timber construction apart from the stone circles has much in common with that of Woodhenge. Some of the post-holes are of great size and must have held large timbers. The use of timber at all in the centre of this sarsen country, where innumerable stones shaped and hewn by nature were lying close at hand, is remarkable, and shows that in prehistoric times timber was not only used as a substitute when stone was not available, but in this case at least was actually chosen in preference to stone.

The purpose of this note is to make known the discovery of pieces of lava rock from Niedermendig in the Eifel, Germany, in one of these post-holes. The rock has been identified by Dr H. H. Thomas, who says there can be no doubt about its place of origin. About twenty small, roundish, much weathered fragments, none showing signs of use, were found scattered through the lower half of a large, 5 ft. deep post-hole. Nothing later than beaker pottery was found in the holes, and there is no reason to think that this particular one was in any way disturbed at a later date. The fact, indeed, that in this hole a core was observed denoting the position and decay *in situ* of the timber upright, proves that it had remained undisturbed since the decay of the timber.

This being so it is hard to get away from the inference that the lava rock was brought to this country by beaker-using people coming from the Rhineland. It may have been brought as a mealing stone for rubbing or grinding corn. A corn grinder must have been a household necessity in daily use, and therefore an object likely to have been carried by an immigrating people. In the course of time the stone was broken, and fragments may have found their way into the filling of this hole, along with other rubbish from the surface such as potsherds, bones of animals, and so on.

Previous to this discovery at the Sanctuary there seems to be no record of this rock associated with pre-Roman remains in Britain, but in Roman and medieval times it was imported for mill stones.*

It was, however, worked and used for mealing and rubbing stones by people in a neolithic stage of culture in the Rhineland (Michelberger,

* In the German publication referred to below mention is made of the discovery of Niedermendig lava in a Piet's mound (Pictenwall) in Scotland, and Dr Brink in the *Mayener Geschichtsbuch*, is quoted as the authority for the statement. On enquiry at the National Museum of Scotland, Mr J. Graham Callander tells me that nothing is known there of this alleged discovery.

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Pfallbau). There is said to be no direct evidence of its use there between the Neolithic and the early Iron Age Hallstatt period, when it was much used and continued so through La Tène, Roman and later times. It can hardly be doubted, however, that this rock was used by beaker people in the Rhineland. The lack of evidence of its direct association with beakers is due probably to the fact that mealing stones are not usually found in graves, and that few of the living sites have been investigated. In the great earthwork of Urmitz (interrupted ditch type) between Coblenz and Cologne, built by Michelberger, and later occupied by beaker people, mealing stones, etc., of this rock are found.

The early mealing stones of this rock from the Rhineland are identical in shape with the so-called saddle querns with which we are familiar in England from Early Iron Age sites.

Perforated hammer or axe heads were occasionally made of this rock.

I am indebted to Herr Georg Kraft of the Freiburg Museum for information as to the use of lava rock in the Rhineland, and for reference to a paper on the subject entitled 'Die Basaltlava-Industrie bei Mayen (Rheinland) in vorromischer und romischer Zeit', *Mannus*, band VI. (*Zeitschrift für Vorgeschichte*, 1914). A full report of the excavations at the Sanctuary will appear in the June number of the *Wiltshire Archaeological Magazine*.

HISTORICAL STUDY BY FLUORESCENCES

Mr L. V. Dodds writes :—

Further interesting work has recently been completed in the study of fluorescences emitted by the inks of manuscripts and the like when examined beneath ultra-violet rays.* It is by this method that many palimpsests have been deciphered and much information gained of value to historical study. So far not a great deal of work has been done at the British Museum, but the initial researches are of considerable interest.

The ink of papyri and the inks of later periods containing such reagents as gallic acid have so far proved inert to the rays, but there is considerable scope for further study and in Germany it has been found that some papyri can be examined successfully by this method.

* A note on deciphering palimpsests by Mr L. V. Dodds is printed in *ANTIQUITY*, 1929, III, 219-21.

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Some interesting results have been obtained by Professor Manly and Professor Rickert, who are investigating the names and markings scribbled on Chaucer MSS. The fluorescences excited by the rays enabled a number of these to be read which were immune to other methods, while other doubtful or illegible markings have been confirmed.

In this particular branch of study experience at the British Museum has shown that in some cases reasonably good results are obtained, while in others little more comes up than can be seen with the naked eye.

Dr Cellier, of the Musée du Louvre, has obtained satisfactory results in the examination of paintings for signs of retouching, and some pictures, the origin of which was in doubt, have been identified as the work of a particular artist. All types of rays have been used by Dr Cellier and his colleagues and it is stated that the great advantage of the ultra-violet group is that no damage is done to the painting during the examination. One interesting and not unhumorous result of this work is that one or two minor paintings in the Louvre which were believed to be original have now been found to be copies by a much less-known brush.

While this means of using ultra-violet rays is important, there is another application which may become of much greater value to the student. Dr Cellier has shown that the actual method of working used by the artist can be studied by this means. The varying brush strokes are clearly seen, and it seems possible that some knowledge may be gained of the skilful technique by which some of the old masters achieved their effects. Special consideration is now being given to this most interesting problem.

KING ARTHUR'S LAST BATTLE

Neither the place nor date of any of King Arthur's twelve battles are known.* Doubt has even been cast upon his existence; and it has also been suggested that he may have been the same person as Aurelius Ambrosius. We do not however think that either of these opinions about him can be maintained. We believe that he was a historical person, distinct from Ambrosius and probably his successor as Dux Bellorum or Wledig.

The evidence of Gildas, who does not mention Arthur, suggests, if it does not prove, that Ambrosius preceded Arthur; but Gildas gives no

*An article on Arthur's battles by Mr W. G. COLLINGWOOD is printed in *ANTIQUITY*, 1929, III, 292-8.

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precise or intelligible chronological data. Such are provided by a passage in the 'Historia Britonum' of Nennius which has been strangely overlooked by historians.¹ The passage quoted evidently refers to a battle in a civil war between Britons and other Britons, not between Britons and Saxons. This is proved by the fact that Guitolinus, whoever he may have been, has a Roman name, and by the use of 'discordia' rather than 'bellum' to describe the battle. Its date is indicated by the statement that it occurred '12 years after the reign of Guorthigirn'. This evidently does not mean after his death but after the time when his effective leadership came to an end. No ancient author states in what year this happened, though 'Nennius' gives some rather difficult facts in his chronological table.² We can however infer it within certain limits. Vortigern was certainly reigning when Hengist and Horsa came to England and were peaceably received by him; he was certainly not reigning in 455 when Vortimer, as Dux Bellorum presumably, fought a battle recorded under this year in the 'Old English Chronicle'.³ Twelve years after this, when the Battle of Wallop occurred, would be 467. That gives us, within reasonable limits, a date for Aurelius Ambrosius, and this, so far as I am aware, has not hitherto been possible. It probably represents an early episode in his career, and may even mark his emergence as Dux Bellorum. The years preceding may have been spent in civil strife with other British leaders who desired this title; there is evidence for such strife in Gildas.

¹ 'Et a regno Guorthigirni usque ad discordiam Guitolini et Ambrosii anni sunt duodecim, quod est Guollopum, id est Catguoloph. *Chronica Minora*, ed. Th. Mommsen, vol. III, (Berlin, 1898), p. 209.

² An attempt to reduce these facts to order proved unsuccessful, for they are mutually irreconcilable.

³ The 'Irish Nennius' (Todd's edition, 1848, p. 99) says that Vortimer 'rose up against Hengist and Horsa' after Vortigern had retired (probably under pressure) to the west. Then follows an account of his four battles with them, culminating in a victory on the coast. We obtain the date of one of these battles, A.D. 455, from the O.E. Chronicle. The names differ in the two accounts, but the battles can be identified by the fact that in each is the statement that Horsa was killed at one of the battles. The Chronicle states that 'Wurtgern' was the British leader, but this may well be an error for Vortimer his son who is not mentioned in the Chronicle. I prefer to follow the comparatively full and here quite consistent stay of events given by 'Nennius'; but in any case, since this is the last mention of Vortigern in the Chronicle, the argument is not affected.

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A cross-bearing on this evidence is obtained from another statement of Nennius, that Pascent, third son of Vortigern ruled over Buelt (Builth) and 'Guorthegirniaun' by favour of Ambrosius (largiente Ambrosio illi) after the death of his (Pascent's) father. The date of Vortigern's death is not known; the date of 484 is given by the 'Annales Cambriae', but this, though possible, is inconsistent with other evidence.

Roger of Wendover's date for the 'accession' of Ambrosius, A.D. 465, agrees well with the evidence here cited but has no independent authority,⁴ being taken verbatim from Geoffrey of Monmouth.

With regard to the site of the battle, there can, I think, be little doubt that it was somewhere on the river Wallop in Hampshire.⁵ I see no reason why Amesbury should not contain the name of Ambrosius; and if one may trust the Welsh Triads, he was associated with Stonehenge before the days of Geoffrey of Monmouth. It is in just such a region as Central Wessex that one would naturally place his activities.

The bearing of all this on the date of the Battle of Mons Badonicus⁶ may now be considered. The whole theory depends upon the interpretation of the well-known 'difficult' passage in Gildas. Mr Nicholson suggested⁷ that Gildas's 44 years should be reckoned from the emergence of Ambrosius, counting forward. If we assume that his emergence is represented by his 'discordia' with Guitolinus at the battle of Wallop, we get the date 511 (467+44) for the battle of Mons Badonicus.

It is not however quite certain that this was his *first* appearance. The 'Irish Nennius' states that, when he retreated into the north, Vortigern 'left the fortress [which was *not* Caer Vortigern] to Ambrose, and also the government of all the west of Britain'.⁸ We have already suggested that this retreat marks the end of Vortigern's reign, and that it occurred in or shortly before 455. This would give (455+44=) 499 for Mons Badonicus. In either case we obtain a reasonable date. We get the period 455 to 467+ as the 'Floruit' of Aurelius

⁴ cf. W. H. Stevenson in *English Historical Review*, xvii, 631.

⁵ Can this be the 'fontem Galabes, in natione Gewisseorum' where according to Geoffrey of Monmouth, the messengers of Ambrosius found Merlin, before the building of Stonehenge? (ed. Giles, 1844, p. 140: book viii, ch. 10).

⁶ There were two battles of Mons Badonicus. The first, which is the one here in question, is mentioned by Gildas, Bede, Nennius and the 'Annales Cambriae'; the second between Cenwalch and the Britons, by the 'Annales Cambriae' only (under the year 667, corrected date).

⁷ Quoted in Oman, *England before the Norman Conquest*, 1910, 201 (valuable notes summarizing current views on the problem).

⁸ Todd, p. 99.

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Ambrosius; and we must place King Arthur and his twelve battles within the period whose extreme limits may be given as 467-516. (This later date is that of Mons Badonicus, according to the 'Annales Cambriae': Arthur is said to have lived 21 years after this). A closer but of course still more conjectural dating would lie within the period 485-511. These dates agree quite well with what little we know of the general history of the period; and tested by allowing 30 years to a generation they are found to be quite consistent. The same calculation suggests a date of round about 410 for the birth of Vortigern.

COLCHESTER

MR CHRISTOPHER HAWKES, of the British Museum, sends us the following note on the present season's work at Colchester:—

The Colchester Excavation Committee's work of exploring the site of the Celtic city of King Cunobelin, which lies under the threat of road-building and 'development', fully justified last year the forecasts of its importance made in *ANTIQUITY* and elsewhere. The new By-Pass road had been planned to run right across the northern part of the Celtic site, as well as over certain Roman sites north of the Colne, and excavation had to be undertaken at very short notice.

The main site examined, on Sheepen Farm, had been intensively occupied during the half-century preceding A.D. 43, when the city was captured by the Roman Expeditionary Force, and its life was thus roughly contemporary with the reign of Cunobelin. The material culture of the inhabitants was revealed in striking detail: the structural remains comprised those of timber houses with earth and clay floors, open hearths, and drainage, rubbish, and palisade-trenches, interspersed with pits, some of great size, and wells, three of them with well-preserved timber linings of varying types. Pottery was found in very large quantities, and it is of the greatest interest, for along with native fabric of the 'Swarling-Aylesford' and also hand-made earlier types, there appear Roman provincial and Italian wares ranging in date from Augustus to Claudius, and proving importation of such products on a large scale from the Rhineland, Northern and Southern Gaul, and Italy, throughout the half-century preceding the Roman Conquest (see pls. 1-2). The brooches and other bronze objects, and the British, Gaulish, and early Roman coins also deserved close attention: in fact, the civilization of the Britons and its interaction with the growing influence of Rome could be studied in detail for the first time on the most valuable site for the purpose in the whole country.

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It was further expected that the site should reflect the events of the Roman military conquest, and the tentative examination was begun of a large ditch of military pattern, which can hardly be unconnected with the coming of the army of Claudius.

But the Committee's policy of examining everything on the line of the new road had also unexpectedly to be extended to include work on an adjoining field of ten acres, acquired by the Essex County Council for immediate conversion into playing fields; the discoveries here were no less important than those on Sheepen Farm. Digging had also to be undertaken on a Roman site across the Colne, and in the end much of the work on the line of the by-pass had to be held over for 1931.

The situation this spring has therefore been much more urgent in this regard than it was last year. By the time these words appear in print, the time-limit for excavation on the by-pass line will have expired.

The site of the Celtic city extends southwards from Sheepen Farm nearly to the Lexden Road, and on much of it building development is only a matter of time, now that the by-pass is under construction. Colchester, in fact, affords an extreme case of what has become a truism in the past ten years, that ancient sites on the outskirts of expanding modern towns cannot be considered safe until they are excavated. 'Development' is bound sooner or later to come, and the Committee cannot afford to wait until it becomes a matter of weeks.

A beginning must be made during the rest of this summer with further exploration, and it has been arranged that Mr Christopher Hawkes, of the British Museum, shall undertake this work, under Mr J. P. Bushe-Fox, F.S.A., as general Director.

The intensive and systematic work which is called for requires a full measure of financial support. The liberality in response to its appeal that has already been shown in many quarters is a great encouragement to the Committee, but it is bound still to ask for £1000 at least, if its programme is to be at all adequately carried out. Subscriptions will be gladly received by the Hon. Treasurers, Colchester Excavation Committee, Barclays Bank, High Street, Colchester.

Last year we printed (September 1930, p. 362) particulars of the work begun at Colchester, with a plan of the site, and again we cordially support the appeal for funds, the need of which is most urgent.—EDITOR.

PLATE 1



FIG. 1. IMPORTED AND NATIVE POTTERY OF THE EARLY 1st CENTURY A.D.,
COLCHESTER BY-PASS SITE, 1930



FIG. 2. TWO CUPS OF ARRETINE WARE BY THE POTTERS ATEIUS AND XANTHUS
COLCHESTER BY-PASS SITE, 1930

PLATE II



FIG. 1. GROUP OF NATIVE AND IMPORTED BELGIC POTTERY OF THE EARLY 1st CENTURY A.D.
COLCHESTER PLAYING-FIELD SITE, 1930



FIG. 2
BOULDED GLASS CUP (RESTORED),
SHOWING FIGHTING GLADIATORS
IN RELIEF WITH THEIR NAMES IN-
SCRIBED ABOVE. PROBABLY GALLIC
WORK, LATER 1st CENTURY A.D.



FIG. 3
BRONZE TORUS OF LATE CELTIC TYPE

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

The air-photographs of Hadrian's Wall taken by the R.A.F. have turned out unusually well. One of Housesteads fort (Borcovicium) was published in *The Times* (12 March, p. 16) and the *Illustrated London News* (21 March, p. 463). Long before they were taken we obtained a promise from Mr Percy Hedley to write a description of the remarkable lynchets there, but until an air-photograph was obtained, the site could not be properly investigated. We shall publish the account as soon as possible.

The success of these photographs is due entirely to their having been taken under the right conditions of lighting, with long winter shadows revealing the banks and terraces.



Professor Garstang announces the discovery of the cemetery of Jericho, belonging to the 19th century B.C. 'It is one of the richest finds ever made in Palestine, and is already yielding more data than we ever dreamed of. There are over a hundred tombs absolutely intact, and the prospect is unlimited. The first to be opened gave up many complete vases'. We are delighted to hear this news, and congratulate the Professor and Sir Charles Marston on their good fortune. (*Daily Telegraph*, 20 March).



An interview (by the *Johannesburg Star*) with Professor R. A. Dart, the discoverer of the Taungs skull, states that he is of opinion, as the result of his experiences, that the anthropology of the rest of the world will never be satisfactorily understood until Africa has been explored to a far greater extent. He considers it is of the utmost importance to give attention to the terraces along the Congo, for they are probably filled with fossilized remains of animals and, possibly, of man. (*The Times*, 8 April, p. 13).

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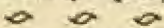
Further examination is to be made of the Wady-el-Mughara (Valley of the Cave) at the foot of Mount Carmel by Miss Dorothy Garrod, together with Dr P. van Heerden and Mr F. Turville-Petre. An account of the earlier excavations on the site is given in *The Times*, 7 April, p. 13.



Excavations have been continued at Chester by Professor R. Newstead which reveal further evidence as to the position of the Roman amphitheatre. A section of the arena wall has been found which is an important factor in connexion with the rest of the theatre. (*The Times*, 6 April, p. 13).



An interesting exhibition was arranged recently at the Wellcome Historical Medical Museum, Wigmore Street, London, to illustrate the prehistoric operation of trephining the skull. It was organized by Dr Wilson Parry, who for many years has made a particular study of this branch of surgery. As the result of his observations he comes to the conclusion that in prehistoric days four different methods were employed in the operation. (*Morning Post*, 4 April).



A short synopsis of a paper read by Dr George A. Reisner in Cairo summarizing some of the results of his excavations in the Giza Pyramid area, undertaken for the joint expedition of Harvard University and the Boston Museum of Fine Arts, is printed in *The Times*, 31 January, p. 13. Dr Reisner gives particulars of funeral customs and contracts of the time of the 4th and 5th dynasties for services to be rendered after death.



The suggestion of a late survival of the Mycenaean type of tomb in Thrace is put forward by Professor Filov, of Sofia University, in an account which he has given of tombs found near Mezek and Kourtolin, on the Turkish frontier. They are of stone, and of the cupola type, built on the same principle as the 'beehive' and 'tholos' tombs, and are considered to belong to the 4th century B.C. (*Manchester Guardian*, 6 March).



A double-axe of stone, perforated through the centre and decorated with fine radiating grooves, has been found at Curraboy Knox, co. Mayo. (*The Times*, 5 February, p. 14).

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An exhibition has been held at the Victoria and Albert Museum illustrating the eighth-century mosaics found at Damascus by the Institut Français. An account of these interesting decorations was sent to us by M. Contenau and printed, with illustrations, in *ANTIQUITY*, March 1930, pp. 105-8.



The eastern wall of the Roman fort at Richborough Castle has been cleared of the earth which has covered it for so long, and one section appears to have formed part of a guard room, or chamber used for some other purpose. (*The Times*, 14 April, p. 17).



A Roman villa at Southwick, near Portslade, Sussex, has been excavated by Mr S. E. Winbolt. (*The Times*, 26 March, p. 16; 13 April, p. 15).



The Colchester Excavation Committee began the new season's work on the site of Celtic Colchester in April. The Committee make an appeal for further funds towards the very considerable expense of this most important piece of archaeological investigation. (See p. 239).



The extraordinary activities of a society in Peking, known as 'The Society for the Preservation of Ancient Relics', which gives 'cultural objects' its particular attention, are reported in *The Times*, 30 March, p. 11. The Society was formed in 1928 and evidently intends to cover a wide field of action, for its 'cultural objects' extend from works of art to fossil remains dating millions of years before Man appeared. Among those who have experienced the interference of the Society are the Expedition of the American Museum of Natural History, under the direction of Dr Roy Chapman Andrews, Dr Sven Hedin, Sir Aurel Stein, and, as we mention below, the Haardt Expedition. Much annoyance and loss of time must have been caused to all by this quite futile obstructionism.



In speaking of plans for the further excavation of Knossos Sir Arthur Evans states that a wholly new class of 'creamy bordered' ware has been found, illustrating the finest age of Middle Minoan polychrome. Another interesting discovery was a room of a private

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house which contained the remains of about 40 vessels and other objects devoted to a domestic form of snake-cult. (*The Times*, 30 March, p. 11).



A letter from Mr George A. Macmillan, Chairman of the British School at Athens, drawing attention to the work of the Expedition on the site of the temple of Hera Akraria at Perachora, and the great importance of the finds of last year, is printed in *The Times*, 26 March, p. 10.



An outline of the programme of exploration arranged by the French Expedition which is to cross Asia from west to east under the leadership of M. G-M Haardt, is given in *The Times*, 16 March, p. 11. The Expedition has the official support of the French Government and is undertaking certain research for various societies in France and ethnological museums in Paris. An important part of the programme is the investigation of the Chinese provinces from an archaeological point of view and we regret to see (*The Times*, 15 April, p. 13) that the Expedition has been held up at Nanking through trivial objections raised by the Chinese 'Society for the Preservation of Ancient Relics', whose vexatious interference with scientific work has been mentioned.



Preliminary reports of the work of the joint Expedition of the British Museum and the Museum of the University of Pennsylvania at Ur have been communicated to *The Times* by Mr C. Leonard Woolley (6 February, p. 15; 20 March, p. 13; 10 April, p. 11). The great tomb-building of the Kings of the third dynasty, the discovery of which had already been made known, has been cleared. A chapel was found dedicated, as an inscription on a votive mace-head shows, to a little known deity Pa-sag, the 'protector of desert paths'. Later in the season attention was given to the residential quarter and there are now over 20 private houses, besides chapels, shops, and warehouses which 'give a consistent picture of Ur in the Abrahamic age'. A number of tablets have been found which concern business transactions, and in another instance they indicate the house of a priest who was also a schoolmaster. There are some 150 school exercise tablets and mathematical texts which will reveal the methods of a Sumerian school of the period 2000-1900 B.C.

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An account of the Sturge Collection of flint implements in the British Museum, which numbers some 180,000 specimens, is given in *The Times*, 21 April, p. 11.

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Writing in *DISCOVERY* (February 1931, p. 45) Mr C. J. Gadd, of the British Museum, says of the Ras Shamra tablets* :—

‘ These tablets, indeed, tell us nothing of the origin of the Phoenician alphabet itself, for their characters have no likeness to the Phoenician characters, and it would be very rash to say that they create any presumption that the Phoenician letters were made out of cuneiform. What they do suggest is that in the thirteenth century B.C. the alphabet was already known (as Ahiiram’s coffin had indicated) probably in very much the same form as it is found on that coffin, which does not in fact differ very widely from that of the Moabite Stone.

‘ The Ras Shamra alphabet is most probably the invention of a scribe schooled in the Babylonian cuneiform, alive to the convenience of the alphabetic method, but unwilling to give up his clay tablet and stilus, which, nevertheless, he finds very ill-adapted to the linear shapes of the Phoenician characters, and thus he devises wedge-combinations of his own for the same purpose. So much for his convenience and his contribution ; but we have still to continue the search for the origin, perhaps the genius, which produced, not so much the Phoenician letters, but the idea of the alphabet ’.

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The annual report of the Federated Malay States Museums Department contains details of an interesting presentation made to the Perak Museum. It comprises objects of the Stone and Iron Ages and two jars of later date. Among the specimens are stone bark-cloth beaters, axe-heads of ordinary types, some very fine quoit-discs, part of a stone bracelet, and a shouldered axe. The discovery of the last mentioned object—if carried, as Heine-Geldern maintains, by the Austroasiatics—proves the presence of the Austroasiatic culture in the Malay Peninsula. The Iron Age tools are mostly of socketed types, and part of a bracelet of translucent blue glass is probably also to be ascribed to that period.

* See F. A. Schaeffer, ‘ The French Excavations at Minet el Beida and Ras Shamra ’, *ANTIQUITY*, December 1930, p. 464.

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In *Germania* for January last, the late Dr Drexel published an article on the pre-Roman origins of the Romano-Celtic temple. He connects them with four-sided enclosures of the La Tène period called, from their shape, Viereckschänze, and these again with *TEMPLUM* in its old Roman augural sense of a ritual *Témenos*. Thus the Roman augur corresponds with the Celtic druid. But, as Mr Christopher Hawkes has pointed out to us, the Viereckschänze are just the same kind of enclosures as our 'late Bronze Age camps', typified by South Lodge Camp in Cranborne Chace. Were these temples? We doubt it, but the suggestion is at any rate well worth examining.



The Bosanquet and Garstang Collections of Aegean and Hittite material respectively, are again on view in the Liverpool Museum, after being in store for some years. They have been catalogued and re-arranged by Miss D. M. Vaughan, and a full card-index is available for reference by students. The Aegean material includes many reproductions of well-known objects from Knossos and Mycenae, as well as pottery and other original objects, mainly from Professor Bosanquet's excavations at Palaikastro (described in *B.S.A.*, VIII-XI). The Garstang Collection comprises material from the excavations at Meroe (*Liv. Ann.*, 1910-14), in addition to the casts of sculptures from Hittite sites and the Hittite small objects. These latter include the inscribed stone from Aintab, (*Liv. Ann.*, I, p. 8, pls. IX and X, and *Hittite Empire*, pp. 312-13), tomb-groups from the cemeteries at Deve Huyuk (Woolley in *Liv. Ann.*, VI and VII) and a series of vases restored from fragments found in the stratified mound of Jobba Eyuk at Sakje-Geuzi. (The collection of sherds from that site, referred to in Frankfort, *Studies in Early Pottery*, II, 154, n. 2, remains at the Institute of Archaeology). The same gallery contains a type-series of Cypriote pottery of the Bronze and Iron Ages, selected from the Museum's stores, and a group of Cypriote sculptures from the same source.

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. Books are occasionally included.

Neue Ergebnisse der neolithischen Forschung im südwest polnischen Lössgebiet, by Jozef Zurowski. *Praehistorische Zeitschrift*, 1930, XXI, 3-20.

Über die Herkunft der Hallstattkultur der Schwäbischen Alb, by Georg Kraft. *Praehistorische Zeitschrift*, 1930, XXI, 21-75.

Die Einbaume im Federseeried und im übrigen Europa, by Oscar Paret. *Praehistorische Zeitschrift*, 1930, XXI, 76-116. An exhaustive account, with lists, of dug-out canoes.

On a causeway at the prehistoric settlement of Southchurch, Essex, by A. G. Francis. *Trans. Southend-on-Sea Antiquarian Society*, 1930, II, 1.

An admirable account marred by complete absence of plans and illustrations. The author is not responsible for this grave omission which renders the paper almost unintelligible. It is thought that a pile-dwelling lies at the end of the causeway, and it would be highly desirable to determine this by further excavation.

Donation Edouard Bernays, by the Baron de Loë. *Bull. des Musées royaux d'Art et d'Histoire*, Bruxelles, ser. 3, no. 1 (Jan. 1931), 2-9, illustrated.

Describes some of the more important prehistoric objects presented by M. Bernays, many of them being from the dredgings of the Scheldt (Escaut) at Wichelen and Schoonaerde. The collection, though the property of the state, is not yet on permanent exhibition.

Journal of a Somerset Rector—John Skinner, A.M., Antiquary, 1772-1839: parochial affairs of the parish of Camerton [Somerset], 1822-1832. Brit. Mus. MSS. nos. 33673-33728. Edited by Howard Coombs and the Rev. Arthur N. Bax. (London, John Murray, 1930). pp. 330, 5 illus. 15s.

This is a most disappointing book. John Skinner was no Parson Woodford, but a neurotic antiquary who shot himself after a lifetime of indiscriminate digging and scribbling. His note-books, one hundred volumes of them, contain, however,

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the only existing records of much that has vanished ; and a selection from them would have been of great value. It is unfair to his memory to say, as do the editors in the preface, that these notes are 'mostly dead stuff', though that description applies to some of those now published. To redress the balance, a selection from the archaeological notes is required. Will not someone undertake it ?

The 'Sea-land' in Babylonian and Assyrian literature, by R. P. Dougherty. *Journ. Amer. Or. Soc.*, 1930, 1-25.

Identifies the 'Sea-land' with Arabia.

The date of Cissbury Camp, by E. Cecil Curwen. *Antiquaries' Journal*, 1931, XI, 14-36.

An account of Cissbury and of Dr Curwen's excavations there in 1930, lavishly illustrated. Dr Curwen has proved that the camp 'was originally constructed in the La Tène I period (circa 400-250 B.C.), or possibly slightly later'. The article covers more ground than the title suggests.

Romano-British Wiltshire: being a list of sites occupied during the Roman period, with the addition of some pre-Roman villages; by Mrs M. E. Cunningham. *Wilts Arch. Mag.* (Devizes) December 1930, XLV, 166-216.

This descriptive list must be the foundation of all future studies of native life in Wessex both immediately before and during the Roman occupation. It will be constantly referred to by all students, who are under a lasting debt of gratitude to the compiler. In publishing this list, the Wiltshire Archaeological Society is merely continuing its admirable policy of codification, of which Canon Goddard's lists (vols. 37 and 38), and Mrs Cunningham's previous schedules of long barrows (vol. 38) and beakers (vol. 43) are the most familiar and outstanding examples. A schedule of pagan Saxon cemeteries and chance finds would be a welcome addition.

Der Bayerische Vorgeschichtsfreund, heft IX, 1930. Annual subscription 4 marks, single numbers 2 marks. (J. F. Lehmanns Verlag, München 2 sw.).

This is a publication which it is well worth while to keep up with. It was founded in 1921 by the late Herr Johann Kändler, whose obituary appears in the present number, and is under the direction of Dr F. Wagner ; it deals with the prehistory and early history of Bavaria more particularly, but will be found to take account of all the latest tendencies in European, especially Central European, archaeology. The articles in this number are all by Paul Reinecke, and deal respectively with the topographical limits of early habitation in Bavaria, with the late Neolithic Bell-beaker culture, and with Celtic hill-forts. In all these regional survey and field-work play an important part, and the more we have of this sort of work from the Continent, the nearer we shall get to really reliable correlations throughout archaeology. It is interesting to note Dr Reinecke's support of the southwest European origin of beakers (p. 17), and to trace the close correspondence in type and distribution between

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our own Celtic hill-forts and those in Bavaria and S. Germany generally, of which an annotated list is here given. The review of Bavarian field work and excavation for the year is a feature found in too few Continental publications, and along with the excellent notices of new books is just what one wants in England for keeping in touch with German work.

Good Roman type is used throughout : how long will it be before the few last strongholds of Gothic letter in Germany give over ? If the formidable *Mannus* yielded, the rest would surely follow. C.F.C.H.

Tartessos, by Adolf Schulten. *Klio*, 1928, xxii, pp. 284-291.

Summarizes the history of Tartessos from its colonization by an Ionian Greek—*essos* people down to the time of Strabo. R.A.

Die Etrusker in Spanien, by Adolf Schulten. *Klio*, 1930, xxiii; also separately, Dieterich'sche Verlagsbuchhandlung. Leipzig, 1930, 68 pp. with map.

Breaks new ground. The first Asia Minor colonists of Tartessos are now suggested to be a Tyrrhenian people diverging at Cape Bon from the main stream of Tyrrhenian migrations. The hypothetical name *turte* for their country would explain the Iberian form *turta* preserved in Cato and in various compounds. Another hypothetical form *tartasi*, in which the name may have been carried to the east by Carian Greek seamen, would account for the better-known Ionian Greek and Phoenician forms, Tartessos, and Tarshish. The trails of Tyrrhenian place-names are followed round the coasts of the Iberian peninsula, and an attempt is made to reconcile their frequency in Catalonia with the text of the 'Ora Maritima'. R.A.

A Description of the High Stream of Arundel, the heads and risings thereof; the sundry kinds of fishes therein in their several haunts; the swans and eyries; the water bailiff . . . Being the titles of a manuscript written by, or for, the water bailiff of Thomas Howard, 24th Earl of Arundel, about the year 1637, and preserved in the Muniment Room at old Norfolk House, 31a St. James's Square, S.W. Edited with introduction, notes, map and index by Joseph Fowler, M.A. *Sold at the Museum, Littlehampton.*

A quaint and delightful book of more than local interest to the lover of rivers, fish and old customs; and edited with more than local knowledge. Would there were more such ! J.P.W-F.

Reviews

ROCK PAINTINGS OF SOUTHERN ANDALUSIA : a Description of a Neolithic and Copper Age Art Group. By the ABBÉ HENRI BREUIL and M. C. BURKITT, with the collaboration of SIR MONTAGU POLLOCK, BART. Oxford : Clarendon Press, 1929. pp. xii, 88, with 33 plates and 7 maps. 63s.

The Clarendon Press is to be congratulated on the fine volume now added to the rapidly increasing number of works on Palaeolithic art which have been published during recent years, chiefly in France. Encouraged by the generous gift of two coloured plates by the Marquis of Bute, and aided by a grant from the Fund for Promoting the Study of Organic and Social Evolution, which was presented by Prof. J. M. Baldwin through Prof. Poulton to the University of Oxford, the Press has produced a sumptuous monograph which will remain a classic in its subject. It describes the latest of the prehistoric paintings in the rock-shelters of southern Spain, which show the eventual degeneration of the naturalistic art of Palaeolithic man into small conventional figures and symbols. These paintings seem to have been made during a long period, some doubtless by Palaeolithic man himself, but most of them by the succeeding Neolithic man, and a few perhaps by the man of the Copper Age. They have been found most widely spread in Andalusia, but they also occur with the typical Palaeolithic art in eastern Spain, where they are often seen to be superposed on the naturalistic figures.

The first observations on which the work is based were made before 1912 by the late Colonel Willoughby Verner, who pointed out the paintings to the Abbé Breuil. At the end of 1913 the Abbé, accompanied by Mr Miles Burkitt, made some further explorations, and in subsequent years he devoted three seasons to the task of tracing the more important figures and making notes on them. Sir Montagu Pollock has translated and edited the Abbé Breuil's notes for publication with a large selection of his original drawings. Mr Miles Burkitt has assisted in the editing and provided some of the photographs, and he has completed the volume by adding some valuable introductory remarks and general conclusions.

The paintings under discussion are usually only a few centimetres in diameter, and have been made with the red, brown, yellow, and orange oxides and carbonate of iron, probably mixed with some kind of fat which has disappeared. When well preserved, they are so numerous and conspicuous that they are well known to the local peasants, who ascribe them to the Moors. The human figure is especially common, and the females are often represented with a petticoat and head-dress. A form of deer with many-tined antlers is the abundant quadruped, and birds are remarkably numerous.

The Abbé Breuil's detailed descriptions and illustrations begin with the shelter or cave of Las Figuras, in the southwest of the Sierra Momia, in which there are more than five hundred separate paintings, not grouped into scenes. Every noteworthy figure in each of many shelters is mentioned and explained, sometimes with a photograph as well as the Abbé's drawing. There are also many beautiful photographs of the shelters themselves and the country in which they are situated.

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A most useful supplement to the Abbé Breuil's technical descriptions is contributed by Sir Montagu Pollock, who has collected and placed in series several groups of figures of men and deer to show the possible gradual evolution of various symbols. In one series the figure of a man passes into something like the Greek Φ , in others to a cross, a T, or even a star. A squatting human figure becomes a zig-zag, and a figure with multiplied arms (like an Indian deity) eventually looks as if it might represent a tree. A deer, by the loss of the head and neck and the multiplication of the legs, passes into something like a comb: when only two legs and the body remain, it produces the Greek Π . The beginning of symbolism is indeed most evident.

In his general conclusions, Mr Burkitt admits that some of the earlier conventional figures may be compared with the markings on the well-known Azilian painted pebbles. Most of the figures, however, must be later, either Neolithic or even of the Copper Age, which began earlier in Spain than in countries further north. Mr Burkitt points out that the conventional drawings of deer and the hour-glass type of conventionalized human figure which are found on the walls of the rock-shelters, are closely similar to those in the ornament of several examples of Copper Age pottery which are known from Spain. He also compares the conventional figures with those found in certain megalithic tombs, and mentions that two groups of such tombs, undoubtedly of the Copper Age, occur close to some of the chief rock-shelters described. The connexion with megalithic monuments suggests even wider comparisons, but much more research is needed before any satisfactory result can be obtained.

A. S. WOODWARD.

CATALOGUE OF THE ROMAN POTTERY IN THE COLCHESTER AND ESSEX MUSEUM. By THOMAS MAY, F.S.A. *Cambridge: printed at the University Press on behalf of the Colchester Corporation, 1930. pp. xii, 304 and 93 plates. 63s.*

The enterprise and enlightened spirit shown by the Colchester Corporation and its Museum Committee in publishing this massive volume deserves widespread appreciation: it has rendered accessible a considerable part of a great and important collection of material from a really outstanding site. Further, the entrusting of the work to Mr May has enabled him to consummate the labours of a long lifetime in the study and publication of Roman pottery, not the least fruit of which is the general acceptance in this country of the high standard of profile and sectional drawing set by his experienced pen.

By way of introduction he has not found it necessary to go again over the ground he covered in his Silchester catalogue of 1916, and we have what is in effect a series of notes that may be regarded as an appendix to his introductory treatise there. Perhaps agreement will never be reached on the best name for 'Samian': a more momentous question is that of its imitation in native coarse wares. That this did not begin until after the cessation of the Continental Sigillata industry in the 3rd century is the thesis advanced by Mr May here, and recently also elsewhere, but while memories of 'Samian' forms certainly survived among the later provincial potters, as in the New Forest, at Castor, and at Colchester itself, contemporary imitations in good early coarse fabric deserve a wider recognition than they here receive, not least as a document for 'Romanization'.

Another matter of importance is the extension and intension of the term 'Belgic' as applied to pottery. The *Belgische Gefässe* of German archaeologists are properly speaking the products of the early Romanized industry of Belgic Gaul, most notable for its cups and platters in *terra rubra* and *terra nigra* imitating Arretine and early South

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Gaulish prototypes. However, now that the pre-Roman immigrants into Britain who produced the Swarling-Aylesford series of pedestal-urns and other La Tène III vessels have been recognized as Belgic in origin, the expression 'Belgic ware' is in danger of leading to confusion, especially at Colchester where the pedestal-urn people imported masses of the Romanized *Belgische Gefässe* from northern Gaul in the century between its conquest by Caesar and that of Britain under Claudius. For the moment, however, Mr May groups the two classes together, and the collection fairly represents both, though no. 6 on pl. 1 would seem, at least from its description (p. 12), to be a medieval jar.

A long series of decorated Sigillata ensues, not however covering the whole wealth of the museum, which is illustrated by photographs of the originals and of rubbings, many of them almost as clear as line drawings would have been. Mr May's penmanship is seen at its best in his drawings of plain Sigillata forms, and of the coarse wares that follow, though pl. LIX (lids) lacks a scale, and pl. LXIX (amphorae) combines with the drawings of fragments photographs of whole vessels on a different and unspecified scale.

The subsequent section on grave-groups has not been illustrated by the author, but by a series of photographs of varying quality, many of which also have no scale. However, it must be confessed that the quality of the grave-groups themselves varies somewhat: while many of the associations of vessels they comprise are true enough to period, others are too gravely inconsistent for explanation by assumed 'survival', and prompt the student to an attitude of strict caution. Early voluted lamps (e.g., nos. 88, 102a) and bag-shaped roughcast beakers (18, 103), for instance, appear in embarrassingly late company, and Mr May has here restricted himself to severe brevity in his descriptions.

For the most part, however, those descriptions embody lucidity and erudition together, and though his list of potters' stamps is liable to deceive unwary students over the dating, which is habitually tied down with a misleading appearance of rigidity to the years of the accession and death of emperors, it gains in part at least from illustration in facsimile (text-figure 6).

Much material still remains to be dealt with at Colchester, but Mr May must be congratulated on his completion of the arduous task set him in the plan of this volume: those at least who are prepared to pay its price should be willing to apply themselves as carefully to its contents as they emphatically deserve.

CHRISTOPHER HAWKES.

ENGLISH ROMANESQUE ARCHITECTURE. By A. W. CLAPHAM. Oxford: Clarendon Press, 1930. pp. 168, 65 plates, and 52 figs. 30s.

Mr Clapham's book will be welcomed not only by the serious student of pre-Conquest art in England, but also by everyone who takes an intelligent interest in our early civilization, for the author combines sound scholarship with an unusual power of clear exposition, and he has been careful, in producing this volume, to provide a full series of plans and illustrations which could hardly be surpassed for quality.

As Mr Clapham tells us in his preface, his object has been to present a general view of the major arts in England from the coming of St. Augustine to the Conquest, treating the work of the earlier and later Saxon periods as definite manifestations of artistic conceptions in which architecture and sculpture contributed to a common end. In this aim he has certainly succeeded, for every previous writer, with the exception of Professor Baldwin Brown, has confined his attention to one side of the subject.

After a short introduction, giving an outline of our present knowledge of the earliest

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Christian churches, and of the oldest examples known to exist in Gaul and Britain, we have a very clear and adequate account of those 7th century churches of which there are actual remains, or literary notices which tell us something about the fabric. This is followed by a chapter on the stone crosses and sculptured ornament of the pre-Danish period, an admirable summary of what is known about this important subject, which supplements, and at times criticizes, the standard works of Brøndsted, Baldwin Brown and Collingwood. In this survey, the curious carvings at Breedon on the Hill, whose importance Mr Clapham himself was the first to recognize, are of course included.

The second part of the book treats of the post-Danish period, a subject admittedly obscure and difficult. Mr Clapham accepts generally Professor Baldwin Brown's conclusions as to the dates to be assigned to various buildings. Britford, however, he believes to have been built c. 800, on account of the well known vine scroll carving, and in this probably most students will agree with him.

Much attention has been given to the question of the sources from which Saxon craftsmen drew their inspiration, a highly controversial subject. It is to be hoped that healthy discussion will be the result. In support of the suggestion that the craftsmen to whom we owe the earliest Anglian crosses may have come from the Enarchate, it might be pointed out that whether the Ravenna throne be Alexandrine work or not, there are two sarcophagi in the church at Classe which bear vine scrolls of exactly similar type, that the full length figures in front of the throne may well have inspired the craftsman who carved the figures on the Ruthwell cross—note the veiled hand holding the book, the Greek form of blessing, the arrangement of the drapery, and the general attitude—and that, although the three-strand cord is almost universal in Rome, yet in Ravenna a two-fold strand is common. The single cord more generally found in English work is no doubt due to the coarser quality of the stone employed.

The suggestion that later Saxon architecture is an offshoot from the parent Carolingian stem may perhaps be accepted, provided that the source of all Carolingian architecture in northern Italy be remembered. Mr Clapham gives a somewhat grudging assent to Professor Baldwin Brown's theory that the essential features of later Saxon architecture are of German inspiration. This is by no means clear. My own view is, that the source is to be found in Italy. I can see no evidence to suggest that foreign craftsmen worked upon any extant late Saxon church, and such influence from abroad as we are able to trace points rather to the attempts of local masons to reproduce, from somewhat vague descriptions, the wonderful things which some priest or wealthy layman has seen when on pilgrimage to Rome. Thus the pilaster strip, as used at Earl's Barton, may well be derived from such a church as Toscanella, which must have been known to many a Saxon pilgrim.

Mr Clapham, then, has produced a book which is not only authoritative in its presentation of facts, but is also most stimulating, and must be provocative of further research. Every student will look forward to the appearance of his next volume, and some of us may even wish that this one had been longer. E. W. LOVEGROVE.

ST. CATHARINE'S HILL, WINCHESTER. By C. F. C. HAWKES, J. N. L. MYRES, and C. G. STEVENS. *Winchester: Warren & Son, the Wykeham Press, 1930.* pp. 310 and numerous illustrations. 12s. 6d.

It is in the fitness of things that three Old Wykehamists (though not very old ones) should have taken upon themselves the task of exploring 'Hills'. It is likewise in the

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fitness of things that the task should have been well and truly done. This handsome volume is, in the first place, a new landmark in the long-neglected study of our hill-top 'camps'. In the second place, the reader who prefers Christians to Celts may find them in the second part of the book, which deals with the re-discovery of St. Catharine's chapel on the summit of the hill, and various matters relevant thereto. And yet again the faithful Wykehamist may turn, if he will, straightaway to 'Part Three: since the Reformation', where he will find all that concerns the origin and early history of the connexion of Winchester College with the sacred hill. This is truly a book of parts, scholarly, well written, well illustrated (mainly by Mr Stevens and Mr Hawkes) and well printed. It is an essential book.

First, the 'camp'. The excavations revealed 'the existence of a settlement on the summit, open at first and then fortified by the girdle of earthwork, which lasted perhaps from the 6th to the 2nd century B.C., and thus covers the least known period of the Iron Age in this country'. The earthwork itself is thought not to be earlier than the latter part of La Tène I, say the 4th century B.C., on the evidence of the pot-sherds found in and under the bank. The dating of these small sherds is rightly, however, suggested without undue emphasis, and both they and other important pottery from the site may eventually have to be put back a little further in date. This question may be allowed to settle itself in the fullness of time; the evidence of association is here clearly recorded, and any necessary adjustment in the absolute dating of the settlement can be made without difficulty.

Structurally, the outstanding feature of the 'camp' is the solitary entrance which, on excavation, has revealed features without close parallel elsewhere. A special tribute must be paid here to the skill with which this delicate piece of excavation was carried out. The ends of the rampart were found to have been revetted with timber backed by clay, and towards their inner ends these revetments were set back to form shallow recesses or 'guardrooms'. Subsequently, the timber-work had been reinforced with chalk blocks, and part of the roadway had been blocked. This remarkable entrance has induced Mr Hawkes to add a valuable excursus on 'The development of Early Iron Age hill-forts and their entrances', in which the latter are conveniently classified by type and date. St. Catharine's Hill provides the earliest dated example of the in-turned entrance in Britain, and the presence of 'guard-chambers' here effectually disposes of the hitherto-plausible theory that this feature in certain later 'camps' in Wales was of Roman derivation. But the main feature of the excursus is a reasoned statement of the rise and development of hill-fort construction in western Europe throughout the Early Iron Age. Mr Hawkes rightly emphasizes the hill-fort activity in the later Hallstatt and earlier La Tène periods, and so modifies views urged a dozen years ago (e.g., by the present reviewer) wherein excessive stress was laid upon the important hill-fort phase of La Tène III.

The defences of St. Catharine's Hill were 'finally destroyed by a conquering enemy', and the hill was not afterwards occupied until the Middle Ages. The disaster seems to have occurred in or before the middle of the 2nd century B.C. It is difficult, therefore, to equate the destroyers with the conquering Belgae, who, according to the present view, did not enter Wessex until at least a century after that date. It is, however, impossible to hope for a convincing equation between the destruction of an individual hill-fort and the few historical incidents which chance happens to have preserved for us. When in fact the Belgae did reach the district, they seem (if the slight evidence available is representative) to have settled approximately on the site of the Roman and medieval town.

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Everywhere the semi-Teutonic Belgae in Britain seem to have been valley-dwellers rather than hill-folk.

In the 12th century a small cruciform chapel, with an attached lodging for the priest, stood upon the hill-top, and the history and archaeology of this structure are fully dealt with, largely by Mr Myres. The 'small finds' are recorded with a welcome fullness unfortunately rare on medieval sites; indeed it may be doubted whether any medieval building of commensurate size has ever been so meticulously described in all its aspects. The description concludes with a comprehensive note on the history of devotion to St. Catharine in medieval England.

Part three of the book is for the ear of the Wykehamist, and is no subject for a barbarian pen. Suffice to say that it is a pleasant and worthy epilogue to the story of a hill that, after bearing in turn a British town and medieval chapel, has become 'a Public School playing-ground that has been strangely beloved'. R. E. M. WHEELER.

THE MOUNT OF GOD. By The Rev. W. J. PHYTHIAN-ADAMS. Palestine Exploration Fund Quarterly Statement, July 1930, pp. 135-49; October 1930, pp. 192-209, and sketch-map.

TRANSJORDAN: an ancient and a modern raid. By Group-Captain L. W. B. REES. The Royal Air Force Quarterly, January 1930, vol. 1, no. 1, 138-159, folding map in colours.

We wish to draw attention to these papers because they deal with a subject—that of the Old Testament geography—once popular, then shelved, but now (if we mistake not) about to come to the front again. Both deal with the Exodus and wanderings of the Children of Israel, and both are written by students with firsthand knowledge of the country.

Mr Adams has a single objective upon which he trains his very efficient battery of argument; he maintains that Horeb-Sinai was a volcano in the land of Midian, to be identified with Tadra or Hala el Bedr (the modern mountain also seems to have alternative names) lying between 27° and 27° 30' north lat. and 37° and 37° 30' east long. In favour of this identification he brings forward evidence both of a general character—such as the remote situation of Tadra, which is cut off from the Holy Land by a 'great and terrible wilderness'; and also of a more specific, archaeological kind—the reported existence there of twelve stones with religious associations, and of 'various signs and inscriptions . . . carved on sacrificial boulders'. (Musil, *The Northern Hegaz*,¹ p. 216). If we agree, as we probably shall, that the Mount of God was a volcano, we must look for it in one of two regions; and Mr Adams rejects the lava-field of Ma'an, where volcanoes are also found, and where Group-Captain Rees locates it, because it is too near Palestine to satisfy the requirements of the biblical account. Both writers reject the modern 'Sinai' peninsula, whose name lacks really ancient authority and where there are no volcanoes, and never were any.

It is not for us to decide between these alternatives. What is obviously required is for someone to go and make a thorough survey of those ancient remains round Tadra, which even Musil knew of by report only, and which no traveller has seen. (He might

¹ Reviewed in *ANTIQUITY*, II, 123.

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also at the same time revisit that 'Stonehenge' of Central Arabia described by Palgrave¹ and by no one else). The results might be inconclusive, but nevertheless they would certainly be of great archaeological value.

Group-Captain Rees has many targets, and he does not claim to score direct hits every time. What is important is the fact that he knows the lands of Midian, Edom and Moab as few men alive know it. He has explored it from the air and on the ground; and that undoubtedly is the way to get the best idea of the topography of any region, particularly one consisting largely of wide, open spaces. His map contains information to be found nowhere else, and so does the text. He traces the wanderings of the tribes with sureness, but (if we may say so) without cocksureness. He draws a comparison—perhaps a little strained—between the Exodus and that other 'raid' of Colonel Lawrence; and he gives chapter and verse throughout. It is an honest and scientific attempt to solve one of the classic problems of history; and it deserves to be considered by biblical scholars. We only wish it had been possible for one of them to do so in this review, which in default is written by an amateur hand.

BAHREIN. By ERNEST MACKAY. British School of Archaeology in Egypt, 1925. *Quaritch*. (Published in same volume with *Hemamieh*). pp. 29, and 8 plates.

The island of Bahrein lies in the Persian Gulf, some 20 miles from the Arabian coast. It has long been famous for its chambered gravel tumuli, which, to the almost incredible number of over 100,000 (we are assured by Mr Mackay) have long been one of the great enigmas of the past. That they still remain so to some extent is no fault of the excavators. Datable finds in that remote spot could hardly be expected. Finds of any kind were rare, partly on account of the salt in the soil, partly because the grave-goods were deliberately broken, or 'killed', before interment. A date of 1500–1200 B.C. is suggested, though an earlier one is admitted to be possible.

The presence of so many tumuli on an almost desert island smaller than the Isle of Wight, and still smaller in the past, demands an explanation; and it is suggested that it was used as a burial-ground by the inhabitants of the adjacent mainland of Arabia. The tombs are all oriented in that direction (southwestward); and such indications as are provided by the grave-goods point the same way. Ostrich eggshell, for instance, is abundant, and the pots, being round-bottomed, are more suited for the sandy soil of Arabia. They seem also to have been made from non-local clay. There is evidence in the Far West of the use of presumably sacred islands for burial, and apart from the necessity of some such hypothesis Bahrein cannot possibly have supported so large a population, nor are any archaeological remains of such, in the form of habitation-sites, known to exist on the island.

The tumuli are not without an interest of their own, but we cannot help feeling that the problem, such as it is, has been disposed of for the present generation at any rate by the work carried out by Mr Mackay for the British School of Archaeology in Egypt. Climatic and soil conditions combine to make Bahrein a bad place to excavate in; and it is on the mainland that the final solution must now be sought.

¹ W. T. Palgrave, *Central and Eastern Arabia*, 2nd ed. 1865, I, 251–2. It lay near Eyoon (Ayun) in Lower Kasim, about midway between Hail and Riyadh. This is, of course, a long way—over 400 miles—from Tadra; and both lie within the somewhat inaccessible kingdom of the Hejaz, ruled over by Ibn Saud.

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ANTIGUO PERU: primera epoca. By JULIO C. TELLO. Lima: La Comisión Organizadora del Segundo Congreso Sudamericano de Turismo, 1929. pp. 183. No price stated.

Dr Tello modestly introduces his book as a 'tentative systemization of archaeological data bearing on the most remote epoch in Peruvian history'. Fortunately, however, the tentativeness is not greatly in evidence: Dr Tello intersperses and appends to his summary definite theories as to the origin and antiquity of the early cultures. His views are valuable, representing as they do those of an authority who still champions the ancient Andeans as the first civilized people in ancient Peru.

He divides the pre-Columbian cultures into three epochs, and the first, extending roughly from 500 B.C. to A.D. 400, is the subject of his book. Within this rather arbitrarily placed first epoch he distinguishes two phases: the Andean Megalithic, when the peoples of the Sierra were experimenting in building and agriculture, and the Archaic Littoral, when the inhabitants of the coast, drawing their inspiration from the Sierra, passed from the life of primitive fishers to that of town-dwelling traders and terrace-agriculturists.

After detailed description of the architectural remains of various Sierra sites, including Yayno and the mysterious Chawin, Dr Tello passes to consideration of middle settlements—Aija, Wari, and the like. The last part of the book is devoted to that apogee of the Littoral culture, Parakas, where the recently excavated necropolis has supplied examples of early Peruvian arts at their highest—from mummification to textile weaving.

Much disputed Tiawanako the author finds already settled in the first epoch, and that first epoch's culture generally extending northwards from thence to Changoyape. Rearing pyramids and temples, worshipping the jaguar and condor gods, the people of the Littoral appear for some seven or eight hundred years to have remained indifferent to, or unaware of, the use of metals—with the significant exception of gold, as Dr Tello notes.

The book is not only magnificently, but helpfully illustrated. The contents list at the beginning is, however, as usual with such Spanish works, aggravatingly innocent of page references.

J. LESLIE MITCHELL.

GRAECIA ANTIQUA: maps and plans to illustrate 'Pausanias's Description of Greece'; compiled by SIR JAMES G. FRAZER, with explanatory text by A. W. VAN BUREN. Macmillan, 1930. pp. xii, 162. 35 maps and plans. 25s.

PAUSANIAS was the Greek Camden; but he far surpassed him as an intelligent observer, and in the range of his interests. Sir James Frazer's original commentary has been a classic for more than 35 years, and will remain so; but it is in 6 volumes, costs 6 guineas, and is necessarily ill adapted for the traveller's portmanteau.

We therefore offer a most hearty welcome to this handy atlas, which all visitors to Greece must take with them. The scope is sufficiently indicated by the title, and the names associated with it are a guarantee of authority. The only criticisms we have to make are that the descriptions are not always as clear or as full as they might be, and that sometimes facts and inferences are not rigidly demarcated. The description of Mycenae is an instance. Here, as in the bibliographies, only work done since Sir James Frazer's original publication is taken into account. Consequently there is no mention of Schliemann. Nor is there any hint of the topographical importance of its position—as a stronghold on an important trade-route. Too much, we think, is taken for granted; and essential facts are sometimes omitted. A portable atlas for travellers

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should surely state facts like these, which, however well known and obvious to specialists, are likely to be unfamiliar to some at least of those for whom the book is intended.

The book is in fact, a supplement which takes for granted what has already been published in the original. Professor van Buren laments the necessity for compression, but many of the single pages to which he is necessarily confined contain blank spaces, amounting sometimes to as much as half a page. There would have been room for another 4,500 words altogether, or about 8 or 9 lines each, if we exclude those 20 of the 58 pages which are actually full. A little more of that rigid economy of words which is acquired in the hard school of journalism would have reduced some of the accounts yet further; and the space thus made available might have been used in the way suggested.

It is easy, however, to pick holes, and it is perhaps somewhat ungracious to do so when we are presented with such a splendid gift as this. We repeat that it is indispensable for all travellers, be they specialists or not; and after all, the more obvious facts can generally be found in Baedeker. The maps and plans are, with four exceptions, the same as those which accompanied the original, and they are, for the most part, a delight to study.

DEN NORSKE BOSETNINGEN PAA SHETLAND-ORKNÖYENE. Studier og resultater. Av A. W. BRÖGGER. *Skrifter utgitt av det Norske Videnskaps-Akademi i Oslo. II. Hist.-Filos. Klasse*, 1930. No. 3. Oslo: Jacob Dybwad, 1930. pp. 290, with 151 figs. 22 kroner. (English summary).

Knowledge of the circumstances under which the Norse settlement of the northern and western isles of Scotland took place in the 8th and 9th centuries has not kept pace with knowledge of the contemporaneous Scandinavian settlement of England. The present volume marks the first notable step forward since the work of Joseph Anderson half a century ago. By brilliant work in field and laboratory Scandinavian archaeologists have gradually established among the innumerable relics discovered in those northern lands—certainly among those from the Christian era—a pretty accurate chronological sequence. Equipped with this knowledge, Professor Brögger has recently addressed himself to the study of Scandinavian remains in Scotland. Where earlier writers have only been able to label a relic as 'Norse', he is able to tell not only the century (if not the decade) to which it belongs, but even the part of Norway with which its type is most closely identified.

To determine the date of the settlement from the date of the types of sporadic relics discovered is, of course, by itself a perilous adventure. For example, one of the famous 12th century runic inscriptions in Maeshowe records that it was cut with an axe which had belonged to Gauk Trandilsson, an historical personage who had lived in Iceland nearly 200 years earlier. But his axe was still extant and in use. Brögger is well aware of this danger, and in general is careful not to strain his premises. In that respect the present volume is much more cautious than his *Ancient Emigrants*, which partly covers the same ground.

In order that the conditions under which the settlement took place may be understood as fully as possible, the first part of the volume is devoted to a review of pre-Norse Orkney, etc. This very comprehensive review is the most competent and useful survey of that field which has so far appeared. He has no doubt that the Picts were a Celtic race, and the parallels he draws between the megalithic structures of Orkney and Brittany, and between the later brochs and the Celtic 'oppida' described by Caesar, are both pertinent and pregnant.

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The latter portion of the book, which is devoted mainly to a discussion of all the recorded early Norse remains in Scotland, is of the very highest value, for here Brøgger speaks with unrivalled knowledge and authority. His review of the evidence from place-names is open to considerable criticism, but here, too, the meagre data at present available have been carefully weighed. From all the evidence at his disposal, his conclusions may be thus summarized. The colonization of Orkney and Shetland began before A.D. 800, and heathen burial customs ended there by 950 if not by 900. The settlement of the Hebrides began somewhat later—probably between 800 and 860 when the main settlement took place. On the Scottish mainland the southern limit of settlement was the Moray Firth, but even in Caithness the settlement was considerably later than in Orkney. It evidently took place in the 10th century, and appears to have been an emigration of farming folk from Orkney.

It was the west of Norway from which the settlers came, and mostly the southwest corner. There is no evidence of anything like an extirpation of the native Picts; on the other hand they were apparently assimilated, a fact borne out by the frequent occurrence of Celtic names among Norse families in the Saga.

It is impossible in the space available here to do justice to this admirable volume. It does not profess to record any new discoveries; it is merely an interpretation of all the facts and discoveries already recorded. But it is a rare example of how careful interpretation by a trained and exceptionally virile mind can push back the barriers of the unknown. For the benefit of readers without a knowledge of Norse, a brief but exceedingly useful English summary of 14 pages is appended.

HUGH MARWICK.

MEDDELANDEN FRÅN LUNDS UNIVERSITETS HISTORISKA MUSEUM.

Edited by O. RYDBECK. (K. Hum. Vetenskapssamfundets i Lund Årsberättelse IV, 1929-30). pp. 90, illustrated. Price not stated.

This publication contains an account by Professor O. Rydbeck, the Editor, of the safe removal from its original site of a complete grave of the 'Battle Axe Culture' and of its transport to and setting up in the Lund Museum. The Professor's well-known views as to the survival of the Ertebølle Culture until almost the end of the Stone Age are supported by a paper on stone axes by M. Rydbeck and by J. E. Forsander's account of a really astonishing Stone Age dwelling-site. M. Rydbeck has also a paper on early Bronze Age brooches in Lund Museum, and, finally, F. Hansen describes the excavation of a partly ruined passage-grave that was found to be rich in pottery and amber. The papers are all in Swedish but German abstracts of them are printed in a short appendix.

T. D. KENDRICK.

POMPEII IN THREE HOURS. By TATIANA WARSCHER. *Industria Tipografica Imperia, Rome, 1930. 20 lire.*

This interesting and well-illustrated volume will be useful, not merely to the 'hurried (one might almost say 'harried') tourist' of whom Baedeker so often speaks, but to the more leisurely visitor. For Madame Warscher knows her Pompeii well, and the excellent photographs from her extensive collection are not one of the least noteworthy features of the book. The text is clear and lucid, and the descriptions of the principal buildings already known, of eighteen selected houses, and of the new excavations, will be found extremely useful.

T. ASHBY.

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STUDI ETRUSCHI, vol. III. *Florence : Rinascimento del Libro*, 1929. pp. 603, and 61 plates. 80 lire.

The two preceding volumes of this interesting and important periodical have already been noticed in ANTIQUITY¹ and that which is at present before us does not in any way fall short of its predecessors. A number of the papers printed here *in extenso* had been read at the first international congress of Etruscan Studies, held in Florence in 1928, also noticed in ANTIQUITY², among them that of Prof. Bosch Gimpera on post-Mycenaean relations in the Mediterranean in connexion with the Etruscan problem; of Prof. Taramelli on Sardinians and Etruscans; of Prof. Sogliano on the oldest defensive enceintes of the cities of Etruria and of the rest of Italy (which he believes to have been wooden stockades); of Prof. Ciaceri on the influence of the civilization of Magna Graecia on Etruria in the 6th century B.C.; of Dr Ashby on the Roman road system in Southern Etruria in relation to the Etruscan; and of Prof. S. Ricci on Etruscan influence on the oldest coinage of Rome. The same remark applies to some of the papers in the linguistic and natural history sections, in the last of which physiography, anthropology, zoology, and metallurgy all find place. We then have short, but important sections on recent discoveries and discussions, publications and congresses, so that the whole volume is one which will repay attention.

T. ASHBY.

LATIN HISTORICAL INSCRIPTIONS ILLUSTRATING THE HISTORY OF THE EARLY EMPIRE. By G. MCN. RUSHFORTH. *Second edition. Oxford University Press*, 1930. pp. xxxii, 144. 8s 6d.

Mr Rushforth's well-known volume, published in 1893, has been out of print for several years, and has now been re-issued in a photographic facsimile—an admirable piece of work from the technical point of view—with various corrections and alterations, including references to Dessau and the British Museum Catalogue of Roman Imperial coins, and a dozen pages of corrigenda and addenda. Thus re-issued, the book will long continue to be what it has been in the past—the standard English introduction to the historical use of Latin inscriptions.

R. G. COLLINGWOOD.

MYTHS OF THE ORIGIN OF FIRE: an essay. By SIR JAMES GEORGE FRAZER. *Macmillan*, 1930. pp. vii, 238. 12s 6d.

Measured with the giant's ruler this book may perhaps be called only an essay; for the author of the *Golden Bough* (in 12 volumes) works on the grand scale. To the ordinary bookmaker it is a book, and a very useful one too. The arrangement is geographical; myths attempting to account for the origin of fire have been collected from all over the world, and certain conclusions drawn. There was a time when fire was not known; then came a period when it was used but could not be made; finally it was both made and used. Lightning, flint-work and the friction of dry boughs in the wind may have been the first agencies to give man fire. It is probable that it was found independently more than once.

A companion volume on known prehistoric and early historic methods of producing fire, with distribution maps, would be very welcome.

¹ 1928, II, 250, 494.

² 1928, II, 337 seq.

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ROYAL COMMISSION ON ANCIENT AND HISTORICAL MONUMENTS AND CONSTRUCTIONS OF SCOTLAND. 10TH REPORT. COUNTIES OF MIDLOTHIAN AND WEST LOTHIAN. *H.M. Stationery Office: Edinburgh, 1929. pp. XLVIII, 260, map and 240 figures. 32s 6d.*

This volume, as is to be expected, has not the attractive novelty of the Outer Hebrides report, but it is a worthy, even if less exciting, successor to its popular forerunner. On the whole the remains of prehistoric times in Midlothian and West Lothian are not of much account and it seems that the fortified settlements on Kaimes Hill and Craigie Hill are at present the early sites most likely to repay investigation; but field monuments are not lacking, and an earth-house partly built of Roman masonry and the ruins of the solitary broch in this area are rightly esteemed as possessions of a high importance. The Roman period provides the authors with fuller material for discussion, so that the determination of the course of Dere Street, and examination of the claims of Edinburgh to rank as a Roman station, and a description of the Cramond fort and of the beautiful Bridgeness distance-slab fill the pages of an instructive section that boasts among its illustrations a handsome coloured plate of an enamelled patera (the page-reference to this [xxvii] should have been stated on the plate itself and also on p. xxxv). The Early Christian period is neglected in the Introduction (where the Gogar penannular brooch [fig. 9] ought surely to have been rescued from the Bronze Age), but the Inventory itself contains the lovely Carlowrie cross-shaft and also the Abercorn shaft, both most admirably illustrated; the authors, however, do well in concentrating in their preliminary essay upon the architecture of later days, for this it is that constitutes the bulk of the book. They give us full measure of the elaborate descriptions and excellent plans and photographs that are now expected in these valuable volumes, and by adding a really useful glossary of architectural terms they materially increase the usefulness of this book for the layman who is wise enough to consult it when he visits—let us say—Linlithgow Castle or Roslin Chapel.

T. D. KENDRICK.

THE ROMAN CAMPAGNA AND ITS TREASURES. By GILBERT BAGNANI. *Methuen, 1929. pp. XVI, 320, with 24 plates and 3 maps. 10s 6d.*

This interesting and useful volume is intended largely for the motorist. The Campagna has, in the last few years, been entirely changed by the construction of a network of new crossroads, which join together the previously unconnected main roads and which are shown only upon the most recent maps. The change of the road system from the figure of a starfish, as it was some thirty years ago, to a spider's web,¹ as it was in Roman times, has thus been brought about, though these new roads, unlike the Roman *devictracula*, are by no means straight, and in most cases follow the bottom of a valley if and where they can. They are, therefore, not as useful to would-be explorers of the Campagna as they might be. It is, however, a pity that they are not marked in the maps, which are otherwise useful, on the front and back end-papers of the volume.

At the same time the transformation into motor roads of the old main highways of the Roman Campagna is proceeding apace. The Via Aurelia and a short section of the Via Salaria are the only roads that have preserved their old-world appearance in the immediate neighbourhood of the city. The Via Ostiensis, one of the most characteristic

¹ See *Papers of the British School at Rome*, 1, 136 (published in 1902).

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within my own recollection, has lost all traces of antiquity and has become a mere speedway. The Via Tiburtina and several other roads (which certainly needed it) have been widened, and a number of minor discoveries have been made in the cuttings which have been required. Cultivation continues to spread everywhere, and the Campagna, as Lanciani predicted, is fast losing that wonderful solitude which still renders it unique. Parts of it are fortunately still unchanged, and our author, who has a true feeling for its beauties (witness the remark on p. 254)² rightly indicates the district between the Via Appia and the sea as that which has undergone the least transformation. Much of the territory on the right bank of the Tiber is still unchanged, but this, which is in reality part of Etruria, is not dealt with by our author, for reasons which he explains in the preface. In his eminently readable description he works round from the seacoast to the Via Salaria and the Tiber, always following the main roads. He is concerned with the history and antiquities of all periods, and thus caters for readers of all classes, both learned and unlearned. The limits of the Campagna in the usual sense are considerably overstepped, for, as is only fitting when a motor is used, the traveller is taken as far afield as Terracina, Anagni and Subiaco. As all these are places of the greatest interest, one cannot but be grateful to him for the description of these towns, as well as for the pages which deal with Tivoli; for few people penetrate to the lower town, with its interesting churches and houses. The walker is also considered, being carefully told where to leave the motor and where to get into it again. A few points of detail might, naturally, be criticized, especially where the aqueducts are in question. There are rather too many misprints; and though the style is lively, such phrases as 'the Greeks of the Campania' (p. 70), 'a lurid inn' (p. 73), 'the bookshop Ruggeri' (p. 113), 'so called from a family Monaci' (p. 156), should be corrected in a second edition. But on the whole the book is distinctly useful and welcome, and the excellent illustrations are not the least of its merits.

T. ASHBY.

DER OSEBERGFUND. By F. ADAMA VAN SCHELTEMA. *Führer zur Urgeschichte*, 7. Augsburg (B. Filser), 1929. pp. 79, with 28 plates and 31 figures in the text. 3m 50.

This excellent series of handbooks describing the most notable archaeological discoveries of Germany and the north has been conspicuously well served by its appointed authors, and Dr Van SchelteMA, as is to be expected, has in his turn done full justice to the lovely Oseberg boat and her precious cargo of treasures. He describes the discovery with proper detail and adds to his account of the ship the necessary background of early Norwegian history; but this he has considered to be only a part of his task and the book is completed by a solid chapter on Oseberg art and its origins, a subject upon which the author has already proved himself entitled to a respectful hearing. I regret only that this admirable essay was written before Halvdan Koht's new dating for Hafrsfjord began to gain ground, for I am not aware that any writer has yet attempted to consider the bearing of this small but important forward shift upon Queen Asa's dates and the Oseberg chronology. Setting aside the monumental many-volumed *Osebergfundet*, Dr Van SchelteMA's book is now, of course, the best account of this most famous of all Viking ships; English readers, however, must not forget the illustrated articles by Dr Brøgger and Dr Shetelig in vol. x of the *Saga-Book* of the Viking Society. T. D. KENDRICK.

² Unfortunately motors will soon be able to desecrate both the Sacro Speco and the Monte Autore.

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GERMANIA ROMANA: ein Bilder-Atlas. 2nd edition. In ten parts. Bamberg: C. C. Buchners Verlag, 1924-30. 208 plates, with 240 pp. of text. 16 marks.

The first edition of this admirable work appeared in 1922, just when the German currency had begun to drift rapidly towards the Niagara of inflation. As a result, it was sold out almost immediately, under conditions that must have been anything but profitable to the Römisch-Germanische Kommission, the body responsible for its issue. At the same time the copies failed to reach the public whose needs the Album had been designed to meet, for the catastrophic fall in the value of the mark was accompanied by a no less catastrophic decline in the purchasing power of professional students and scholars. It is greatly to the credit of the Kommission that one of the first tasks to be undertaken, after the monetary situation had been stabilized, should have been the preparation of a new and improved edition.

Originally it was a folio of 100 plates, preceded by 24 pages of introductory matter, which did not profess to do much more than supply titles for the individual illustrations. It now consists of ten parts, five of text and five of plates, in a smaller and more convenient format. The number of illustrations has been slightly increased, but the chief improvement is the amplification of the text. The five double-parts deal respectively with (1) military works (fortresses, forts, frontier-lines, baths, roads, etc.), (2) civil settlements, (3) tombstones, (4) religious dedications, and (5) pottery, tools, weapons, utensils, silver plate and the like. In all of these the regions of the Rhine, the Danube and the Moselle are extraordinarily rich, and it has been possible to make a representative selection that is as instructive as it is interesting. The book is one which no student of Roman Britain should be without. Even those who do not read German will often find the plates helpful, while those who do will learn much from the scholarly introductions, with their ample bibliographical references. There are, in all, about 900 illustrations, usually of excellent quality. At 16 shillings the price is extremely moderate.

GEORGE MACDONALD.

MACHU PICCHU: a Citadel of the Incas. By HIRAM BINGHAM. Published for the National Geographic Society of America by the Yale University Press, New Haven, Connecticut, 1930. pp. vii, 244, 218 collotype illustrations and plan of town. 50 dollars.

This volume, as monumentally priced as produced, contains the report of the 'explorations and excavations made in 1911, 1912, and 1915 under the auspices of Yale University and the National Geographic Society' in and around the ancient site of Machu Picchu in the Central Andes. Until visited by Dr Bingham in 1911 Machu Picchu remained outside the knowledge of the modern world. It had no place on even the most careful Peruvian maps. Neither the *conquistadores* nor their successors ever appear to have located it, thereby doubtlessly saving themselves much vexation and disappointment, for it has yielded no atom of 'treasure' in the popular sense, though much from the viewpoint of the Americanist.

Built on a ridge between two peaks, in the heart of a nearly inaccessible mountain-block, the temple and palace walls display the well-known characteristics of the 'cyclopean' style of Tiawanako and early Cuzco. For unknown reasons Dr Bingham describes this style as 'typically Inca'. The ridge was terraced for agricultural purposes, elaborate guard-houses and signal-stations reared at various places surrounding the site, and what is probably the most magnificent *intihuatana* in Peru cut out of the solid rock.

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Population grew ; a housing problem arose ; buildings encroached on the terraces . . . then, except for a few priests and caretakers, the site was deserted for several hundred years while Manko Kapak sallied forth with the surplus population, captured Cuzco, and reared the ' Empire of the Incas '.

This is Dr Bingham's theory, though the evidences of the ruins hardly seem to warrant any such whole-hearted acceptance of Montesino's account of Inca origins. He ascribes the second (true Inca) style of architecture superimposed upon the first to the hasty building operations of a band of Sun Virgins and their guardians, convoyed across the mountains for safety from Pizarro and his followers.

These somewhat bizarre speculations apart, the book is a valuable record of solid and painstaking work. The accounts and illustrations of the pottery and metallurgical remains discovered are admirable. The first contains few surprises, though several conventionally beautiful specimens ; laboratory tests on the second, however, seem to have established quite definitely that Peruvian bronze was no accidental mixing of copper and tin, but definite and skilled intention. It is hardly possible to over-estimate the importance of this discovery as regards the whole field of American archaeology.

The volume is magnificently illustrated—too magnificently in some instances, some of the photographs suffering from an ' arty ' toning which seriously detracts from their value.

J. LESLIE MITCHELL.

KUNST UND KULTUR DER VORZEIT EUROPAS. DAS PALÆOLITHIKUM.

By HERBERT KÜHN. *Berlin and Leipzig : Walter de Gruyter & Co. 1929. pp. 529, with 169 text-figures, 120 black plates, 6 coloured plates, and 8 maps.*

Dr Herbert Kühn, the well-known prehistorian of Cologne, is preparing an exhaustive treatise on the art and ideas of prehistoric man in Europe, and has completed the first volume, which deals with the Palaeolithic period. It is an admirable historical summary of the subject, with full references ; and it is especially valuable because the author himself has visited most of the localities in Europe and North Africa in which the discoveries were made, and has studied the various works of art to which he refers. His descriptions, indeed, are based on personal knowledge, and his own observations and comments are numerous and important. The accompanying illustrations comprise not only the usual text-figures, but also 120 plates of photographs, many representing objects of which photographs have not hitherto been published. There are in addition a few excellent coloured plates to show the various styles of rock-painting, and the volume concludes with a series of useful maps on which are marked the known localities of each phase of Palaeolithic art.

In a long introductory chapter Dr Kühn summarizes our present knowledge of the successive stages through which Palaeolithic man passed in western Europe, and discusses the circumstances under which each race lived. He considers that there is evidence of only two cold and two warmer episodes of the Glacial Epoch in the deposits in which undoubted stone implements are found. He describes the changes in the accompanying groups of mammals and plants. He also refers briefly to the few remains of Palaeolithic human skeletons which have been discovered, and emphasizes the fact that there are no traces of art earlier than the Aurignacian stage when typical modern man first appeared. From this time onwards to the end of the Palaeolithic period, three contemporary styles of art are distinguishable. The Franco-Cantabrian style spreads from Russia through central Europe to the Pyrenees and Cantabrian mountains. The

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East Spanish style is represented in Spain south of the Pyrenees. The Capsian style characterizes northern Africa.

Most of the volume is, of course, devoted to the Franco-Cantabrian art, and Dr Kühn notes the remarkable fact that we already know no less than 175 stations in which examples of this art have been discovered. In some stations the number of the works of art ranges from one to three hundred, so that there is ample material for study. Even individuality can be recognized in the differences between the art of different caves and many unfinished and confused sketches, especially on pieces of stone and bone, suggest preliminary studies, for there must have been many painstaking efforts before the masterpieces were achieved. Dr Kühn thinks that man made his first attempts at art when he picked up a stone with an accidental resemblance to an object and improved it by additional scratches and carvings; and he mentions as an example the very rude representation of the head of a horse found at La Ferrassie in the Dordogne. He supposes that wall-paintings began by daubing red ochre round a hand held against the rock or by making imprints of a hand which had been covered with the ochre. All art at first was essentially naturalistic, though a few examples of ornament in dots and lines are found in deposits as old as the Middle Aurignacian.

Dr Kühn gives a well-illustrated account of the East Spanish art, and contrasts it with the Franco-Cantabrian. Here the figures are usually not isolated, but grouped into scenes, often hunting scenes. Here they are in the attitudes of lively movement; and all effects are produced without shading, merely by skilfully drawn silhouettes. Most of the sketches are comparatively small, and they are usually on the walls of rock-shelters, not in the remote recesses of caves. They are often superposed one on another, and the latest of all pass into conventional symbols. Dr Kühn thinks they belong to all periods from the Aurignacian to the Neolithic, and must be the handiwork of a race distinct from that which produced the Franco-Cantabrian art.

The Capsian art on exposed rock-surfaces in northern Africa is very exhaustively treated, and the illustrations include many beautiful photographs by the author himself. The archaic style of the bold incised outlines of the figures is well emphasized. Dr Kühn points out that in Egypt, outline drawings of the same type are seen on the Neolithic and early dynastic pottery, and he considers that the Palaeolithic passes insensibly into the Egyptian culture. When the Sahara dried up, only the valley of the Nile remained habitable. Conditions here led to agriculture and the rapid development of human endeavour.

In conclusion, Dr Kühn discusses the ever absorbing question of the meaning of Palaeolithic art. He agrees with the general opinion that it was mainly inspired by ideas of magic, though he admits that some of it—especially the earliest—was due to purely aesthetic motives. His concise and clear statement of the problem will be read with great interest.

A. S. WOODWARD.

A HISTORY OF THE ANCIENT WORLD. By M. ROSTOVITZ. Vol. 1. The Orient and Greece, translated by J. D. DUFF. Oxford: at the Clarendon Press, 2nd edition. 1930. pp. xii, 418, and 36 figures, 90 plates. 21s.

It is scarcely necessary to introduce M. Rostovtzeff's work, which after being reprinted in 1928 is now in its second edition. Although no changes have been made in the sections dealing with Greece, the author has been led to make certain additions to his chapters on the Orient by the finds made during recent years. These additions

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consist for the most part of new plates, with full descriptions of the essential features of the discoveries. Such is the case, for instance, with the royal tombs of Ur, where a reproduction of the 'Standard' is given, and with the Sumerian palace of Kish. The pages treating of Oriental history are intensely vivid, and all praise is due to the author for devoting so much of his volume to this subject, to which most ancient historians assign only half the importance that they give to Greece, as if Asia and Egypt were not the cradle of civilization, and as if behind Greece were not the East! The ninety plates, many of them containing several figures, are excellent and form an unrivalled series of illustrations, inasmuch as not only the classic works of art are shown, but also others that are very characteristic but less well known. The book concludes with a bibliographical summary; there is also a chronological table in which, while assigning the usual date—the end of the fourth millennium B.C.—to the beginning of the epoch hitherto considered as historical in Asia, yet perhaps, in view of recent knowledge, M. Rostovtzeff places the dynasties of Kish, Uruk, and Ur somewhat too early, in dating them at the beginning of the fourth millennium.

G. CONTENAU.

LES TERTRES FUNÉRAIRES PRÉHISTORIQUES DANS LA FORÊT DE HAGUENAU; tome II: Les tumulus de l'Age du Fer. Par F. A. SCHAEFFER. *Haguenau (Alsace): Publications du Musée (éditeur, G. GROMER, conservateur). Imprimerie de la Ville, 1930. pp. xi, 332 and 30 plates, 191 text-figures. Price not stated.*

Readers of the first volume of this work, which appeared in 1926 and was devoted to the Bronze Age interments of the Haguenau forest, have ever since eagerly awaited the publication of its companion on the Iron Age: that they have had some years to wait has been due partly to M. Schaeffer's mission to Syria in 1929, which has recently been renewed with such brilliant results, and partly to the exacting standard of work he has so consistently set himself in writing, draughtsmanship and comparative study. The result is that these are the best publications that have been produced in France since the War. The paper is good, the type-setting clear and the founts pleasant; the photography is at worst tolerable and sometimes quite excellent, and the author's line-drawings in the text, which represent about a thousand objects, form a monument to his patience and skill only occasionally marred by excessive reduction; our only serious criticism of them is that the index-figures and numbers should be much larger and more boldly and legibly written—as it is, it is often quite hard to make out with their aid which object of a set is which.

The multitude of Iron Age barrows in the Haguenau district, which lies between Strasbourg and the northern frontier of Alsace, all belong to the Hallstatt or the very earliest La Tène period, after which flat-grave inhumation (and subsequently cremation) in the Gaulish manner came in. The first part of the book gives a complete illustrated inventory of every known grave-group. M. Schaeffer has evidently been at the greatest pains to verify the associations of objects in the groups from old excavations, of which Nessel's notes and sketches form the principal record, and consequently we have a most valuable series of wholly reliable material for the history of Hallstatt culture, the objects in each group being illustrated all together and as far as possible to a common scale.

In the second part, on the other hand, each class of objects is taken by itself and treated chronologically in the light of the evidence recorded in the first part and of comparative material, which the author has zealously sought out all over Central Europe and

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Italy. The essay on feminine costume and adornment is most important for its treatment of brooches, pins, bracelets, and torcs, and in particular of the peculiar serpent-ornamented torcs of the final Hallstatt phase, of which a distribution-map (p. 238) is given. Also, the splendid material provided by the decorated bronze belts is reviewed in a skilful essay establishing that they were worn (in Alsace at least) exclusively by women, and that the history of their decorative design proceeds from an initially rich variety of geometric and figure subjects, through degrees of simplification in which figure subjects disappear, to final decadence and monotony. Masculine equipment is as carefully treated, and the pottery should have a special interest for English readers, for, as is pointed out in the introduction with acknowledgement to Mr Dunning, it was in the Upper Rhineland that the Hallstatt pot-types of the Low Countries originated, which at the end of the epoch were brought over to Britain.

In general, the chronological review makes it clear that the orthodox fourfold Hallstatt chronology cannot be rigidly applied all over Central Europe, and for that reason comparative work like M. Schaeffer's between one culture-province and another is all the more essential. The four phases he delimits for Hagenau are (1) transition from the Bronze Age, beginning nevertheless after a complete break in continuity marked by the incursion of Urnfield people, (2) middle Hallstatt, corresponding roughly to the orthodox Hallstatt c and earlier D, (3) final Hallstatt, (4) earliest La Tène. Save under exceptional influence, the rite is inhumation throughout, and the body is normally placed in the make-up of the barrow itself, not in a grave beneath it.

Concerning absolute dating, M. Schaeffer is reticent: perhaps at present this is wise. For the crucial centuries between the break-up of the Middle Bronze Age cultures and the La Tène period, every province of Europe has its contributions to the outstanding problems and to their solution. In M. Schaeffer's hands, those of Alsace have become of the first importance. But any ultimate work of synthesis must rely for accurate chronology on the fruits of intensive work in the Near East. May it be given to M. Schaeffer to do there for the whole of Europe something of what he has done for his own country.

CHRISTOPHER HAWKES.

MISSION ARCHÉOLOGIQUE EN HAUTE DJÉZIRÉ (1928). *Par A. POIDEBARD.*
(Offprint from *Syria*, 1930. pp. 33-42, with map and four plates).

Knowing the honourable place which the EDITOR holds as the pioneer of the pursuit of archaeology from the air, readers of *ANTIQUITY* should be specially interested in this all too brief report. The campaign which it describes lasted less than three months, and it is indeed astonishing that Father Poidebard should have been able within such a brief space of time to add so much to our knowledge of this particular part of the eastern frontier of the Roman Empire. The result is due not merely to the effective use of the aeroplane by skilled military observers, but also to the admirable combination of restraint and foresight with which the whole expedition was managed. Perfectly definite objectives were selected for investigation, and attention was strictly concentrated on each of these in turn. The country examined lies west of a line between Nisibis and Singara, and it is instructive to note the successive *limites* drawn by the Romans as barbarian pressure increased. The present summary was communicated to the Académie des Inscriptions et Belles Lettres. When the full account is published, students of Hadrian's Wall should find in it not a little material that should be of value for comparative purposes.

GEORGE MACDONALD.

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THE DEFENCES OF THE ROMAN FORT AT MALTON (Roman Malton and District, report no. 2). By PHILIP CORDER, M.A., with contributions by H. MATTINGLY, M.A., and M. R. HULL, M.A. Leeds : Roman Antiquities Committee of the Yorkshire Archaeological Society, 1930. pp. 116, 49 figs. in line and half-tone.

This, the second volume of the series that is to deal with Roman Malton and district, is even better than its predecessor. Clear narrative, excellent plans, sections, and half-tones, and full illustration and description of the pottery that dates the many levels involved, combine to make a report as good and as readable as any that we have seen. A few years ago, it was not even certain that there was a Roman fort at Malton; now, thanks to the energy of Dr Kirk and his colleagues, its existence and an outline of its history have been established: and from Mr Philip Corder's pen comes a publication for which all students of Roman Britain will be grateful. Among the outstanding results we will mention two: the site was clearly occupied early in the reign of Vespasian, perhaps earlier than York itself; and in the 4th century, when York's garrison seems to have been reduced, Malton was held in force. The coastal defence system may well have occasioned the change. Mr Mattingly's treatment of the coins is full and instructive; the description and drawings of the figured 'samian' are not up to the standard of the rest of this valuable work.

ERIC BIRLEY.

A LITTLE GUIDE TO ESKDALE. Written and illustrated by SILVERPOINT. Ulverston : Atkinson, 1930. 6d.

With a dozen pages of text and four full-page photographs, this little guide-book, whose author conceals the name of a well-known local antiquary beneath a graceful *nom-de-plume*, is thoroughly to be recommended to all who visit West Cumberland. Much of it is concerned with the antiquities of the valley—prehistoric, Roman, medieval—and it is of excellent quality.

R. G. COLLINGWOOD.

THE POETIC EDDA IN THE LIGHT OF ARCHAEOLOGY. By BIRGER NERMAN. Coventry : Published for the Viking Society by Curtis and Beamish, 1931. 7s. 6d.

The Viking Society has done well in supplementing an earlier publication, Stjerna's account of the archaeological material in *Beowulf*, by this companion study of the Poetic Edda, and it is to be congratulated on securing Dr Birger Nerman as author. His work is a slender little essay, but it is unquestionably a valuable and interesting experiment; I say *experiment* because the success of this study was not by any means a foregone conclusion, as there is really very little satisfactory material for the archaeologist in these poems, and I notice that in most instances where Dr Nerman finds a reference to objects that he believes he can date he very honestly warns us that he is dealing with passages that philologists might perversely choose to interpret differently. My own impression, however, is that the author has made out a very good archaeological case in whole-hearted support of the modern view of the chronology of the poems, but I have no doubt that Dr Nerman would be the first to admit that the archaeological evidence is far from being the most important contribution to the complete argument. The chief items discussed are frosted glass goblets, silver dishes, jewelled metalwork, ring-swords, twisted gold collars, and silver neck-rings, and Dr Nerman also makes excellent use of his preliminary survey of the 'Gold Age' (A.D. 400-550) and the Viking 'Silver Age' in the north. The illustrations are familiar, but abundant and excellent;

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my only complaint about the book is that the author ought to have translated for us all his numerous extracts from the poems; Cleasby makes a rather tiresome companion to this slim little book.

T. D. KENDRICK.

GREEK-ROMAN TREASURES OF GERMAN MUSEUMS. Edited by KARL RIESEL and ERNST O. THIELE. Berlin: Terramare Office, 1929.

Designed to attract tourists to German and Austrian museums of Classical antiquities. A series of quite general articles by officials of these museums on Graeco-Roman sculpture, pottery, etc., in these collections, with some illustrations. The most interesting feature is an account of the new museum in Berlin for the Pergamene Altar and other architecture. The English is (as the title suggests) sometimes uncomfortable, but never incomprehensible. Many proper names require revision: Milet, Marc Aurel, etc.; also such forms as 'Lecythes', 'Silenes'. The tourist will find this booklet informative; it includes two pages of tabulated information as to the hours, charges, and so on, of the various museums.

The series of photographic introductions to the history of art produced by the University of Marburg (published by Teubner) deserves high praise, and should, at its reasonable price, be widely patronized in this country. We have received the following:—

Olympische Kunst (introduction by R. Hamann), 1923.

Griechische Tempel (introduction by P. O. Rave), 1924.

Tempel Italiens (introduction by P. O. Rave), 1924.

Each contains about 60 illustrations, excellently reproduced from new photographs, embracing many very useful views of details (e.g., the capitals of columns), and some exceedingly beautiful pictures. The Olympia number is chiefly concerned with the temple sculptures; the Hermes and the Nike of Paionios are also included. The Greek temples range chronologically from the Old Temple at Corinth to that of Olympian Zeus at Athens. The Italian number gives, on account of the better preservation of many buildings, perhaps a better conception of the world in which Greeks and Romans lived. A bibliography printed on a loose page to accompany the Temple numbers will be useful, especially if it is kept up to date by periodic re-issue. The price of each number is 3 marks in stiff paper cover, or 5 marks bound.

DIVINITÀ IGNOTE. By SILVIO FERRI. Firenze: Vallecchi, 1930. pp. 148 with 44 plates and 49 figures. 100 lire.

AGRIGENTO. By PIERO MARCONI. Firenze: Vallecchi, 1930. pp. 238 with 162 figures. 100 lire.

The youthful and energetic Società Magna Grecia is bringing out under the direction of U. Zanotti-Bianco a series entitled 'Il Mezzogiorno artistico' in which these form the third and fourth volumes. Each of them is very fully and handsomely illustrated. Vol. I of the series is by Alda Levi, and deals with the terracottas in the Museum of Naples; vol. II, by T. Brenson, consists of 52 drawings with an accompanying text, entitled 'Visioni di Calabria'.

Divinità Ignoto is in two parts, of which the second may be familiar to some readers as it has already appeared in almost the same form in the *Bollettino d'Arte* of 1927. It is a discussion as to the proper composition and restoration of the fragments of two

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equestrian groups found at Locri (Gerace in Calabria). The author will not allow that these are simply the figures of Castor and Pollux but considers them rather as unnamed youths, connected with funerary cults. This is the rather loose link which connects part 2 with part 1, a very curious essay of which it is difficult to give an impression in brief form. Ferri is concerned primarily with trying to explain the meaning and significance of various 'unknown gods' (a long series, amongst which one was noted by S. Paul) and objects of cult connected with them. The essay opens with illustrations and descriptions of the enigmatic faceless busts found at Cyrene. It proceeds to discuss with a good deal of curious learning and much ingenious fancy the symbolism of the tomb-form, and all the accessories in sculpture and pottery which belong to it. Though somewhat too imaginative the author has some interesting suggestions and reflections.

Marconi's *Agrigento* is very different in style, a quite direct record of the excavations made by him in the last few years at Agrigento, as we must now learn to call the familiar Girgenti. The results add a great deal to our previous knowledge and in some respects modify it. Marconi finds, for instance, that Freeman's very reasonable theory of the process by which the city grew is in contradiction with the archaeological evidence. The walls were apparently laid out in their full extent at the moment when the city was founded. Marconi has new information to add about all the temples, but especially about the Olympieion where his excavations have solved the chief riddles of the construction. His most interesting discoveries however, are those relating to the worship of chthonian deities at altars older than any of the temples. Very important, too, are the traces of archaic temples of the 6th century preceding the well known 5th century examples which still exist for our wonder and admiration. The book is indispensable to all who are making a close study of Greek temples or of Sicilian archaeology.

D. RANDALL MACIVER.

THE FLOOD: NEW LIGHT ON AN OLD STORY. By HAROLD PEAKE. *Kegan Paul*, 1930. pp. x, 124, 11 figs. 5s.

Among the different races of Western Asia, the ancient tradition was preserved of a flood far more immense than the annual overflowings of the Euphrates and Tigris. This catastrophic destruction of the countries so affected was never forgotten, and its history has been told in such accounts as the Hebrew story of the Deluge or the Babylonian poem on the same subject. The excavations quite recently made at Ur in ancient Sumeria (lower Mesopotamia) and at Kish in ancient Akkad (middle Mesopotamia) have revealed traces of this flood, in the shape of an alluvial deposit, more or less thickly spread, which interrupted the course of civilization. But the culture strata separated by the deposit are not entirely the same at Ur as at Kish, where traces of two or even three inundations have been found. Mr Peake's special merit is that he attempts to coordinate these different data. Using the stratigraphical evidence, he holds that the two principal floods—indicated by the deposits at Ur and by the first deposit at Kish—were contemporaneous. He then investigates the possibility of applying to these results the historical data in our possession. He suggests the date of 5000 B.C. for the beginnings of civilization in Mesopotamia and Elam, then 4250 for the period of the first flood, 3950 for the second; thus 3750 would be the date of the first dynasty of Ur, with the rulers Mes-kalam-dug, Shubad, and the unknown king her husband, while Mes-anni-padda, hitherto considered as a member of the first dynasty at Ur, would belong to the second, dating from about 3295 B.C. Mr Peake's suggestions deserve

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consideration, for he has excellent knowledge of all the elements of the problem ; but I think that he should put considerably later the dates which he proposes for the first dynasty of Ur ; I have given my reasons elsewhere in this journal. On one point, however, I cannot agree with him ; the traces of script forming the name Mes-kalam-dug, engraved on two golden bowls from his tomb, could only go back to a period just before the dynasty of Agade, so that Mes-kalam-dug should not be placed among the first occupants of ' royal tombs ', but among the last. As may be seen from this short summary, Mr Peake deals in this book with one of the most captivating problems of the primitive history of Mesopotamia.

G. CONTENAU.

A HISTORY OF ANCIENT PERSIA FROM ITS EARLIEST BEGINNINGS TO THE DEATH OF ALEXANDER THE GREAT. By R. W. ROGERS. *New York and London : Scribner, 1929. pp. ix, 393, 63 figures and plans. 30s.*

The value of Dr R. W. Rogers' *Ancient Orient* is sufficient guarantee of the excellence of his present work, which is more limited in scope. It appears at an opportune time, for the recent discoveries in Persia and the fuller research contemplated there give it special interest. The author has compiled what has hitherto been lacking—a good handbook dealing exclusively with Persia. His book covers the period of the Achæmenids, when the name of Persia first began to be used for the Iranian plateau, the Elam or ' highlands ' of the Assyro-Babylonians. Mr Rogers first gives a short account of the country, the origins of the Medes and Persians who peopled it, and the religious system which they developed ; he then traces reign by reign the political and social history of Persia, those struggles to overthrow the power of the Palace and to unravel its intrigues, and the ceaseless attempts at imperial aggrandizement. We see the conquest of Egypt, the exhaustion caused by the Persian wars, and all the events up to Alexander's conquest and the organization of his new empire. The illustrations are chosen to show us the most characteristic monuments of Persian civilization, to whatever province of the Empire they belong ; in the case of the last period, place of honour is given to the famous sarcophagus, said to be Alexander's, discovered at Sidon and now in the museum at Stamboul. One of the striking qualities of the book is its lucidity and the due weight given to facts according to their relative importance.

G. CONTENAU.

SUMERIAN LEXICAL TEXTS FROM THE TEMPLE SCHOOL OF NIPPUR.

By E. CHIERA. (University of Chicago, Oriental Institute Publications, vol. xi, Cuneiform series vol. 1). *Chicago : University Press, 1930. pp. x, 19, 126 plates. 42s. 6d.*

The tablets published in this volume form part of the collection in the museum of the University of Pennsylvania at Philadelphia ; they consist of texts in the Sumerian tongue, the work of scribes from the Temple of Nippur (the modern Niffer). Owing to the complicated cuneiform script and to the use of Sumerian, a sacred language, simultaneously with that of Assyrio-Babylonian, the vernacular, very many schools of scribes arose, usually associated with temples. The tablets having such an origin form sometimes the actual library ; sometimes they are model examples or the work of pupils, and they illustrate the method of the scribes' apprenticeship. The lists are made up either of words that are synonymous or at least very close in meaning, or else they are names of deities or geographical terms, or names of objects such as stones or fields, or names of officials, etc. But in spite of this remarkable variety, the scribe takes pains to be complete in each new range of subjects, even at the cost of monotony. The tablets

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are inscribed both on the obverse and reverse, and often the texts on either side vary considerably in character; their contents are not arbitrarily chosen, but are reproductions of an original which in some cases is still extant, or variations on that original. They can be dated to about 2000 B.C., and form part of a lexicographical compilation in use up to the fall of the Assyrian empire. Dr Chiera's transcripts are well done and will be most useful to Assyrian scholars; he has made a notable contribution to our knowledge of the standard of learning attained by the Babylonian scribes. G. CONTENAU.

LA TÈNE IN NIEDERÖSTERREICH. By R. PITTIONI. (Materialen zur Urgeschichte Österreichs v). Published by Private Press of the Anthropologische Gesellschaft, Vienna, 1930. pp. 136, plates and map. 20 R.M.

In publishing a detailed account of La Tène finds in Lower Austria Pittioni has done a great service. Thanks to this book and to two admirable contributions by Mahr and Merhart, our knowledge of Lower and Upper Austria and the Tyrol during the La Tène period is by no means inadequate—would this were so of Styria and Carinthia!

In the Hallstatt period the cultures of Upper and Lower Austria differ strangely from each other, and there is little evidence at that time for relations from west to east along this section of the Danube valley. Pittioni observes that the same state of things existed—at all events as far as southern imports were concerned—during the ensuing early La Tène phase. This, as indicated, is probably due to the two regions in question being linked to the south by different routes, *viz.*, the Central and Eastern 'amber-routes', which connected up with northern Etruscan and Atestine territory respectively.

Pittioni's theory of origin of the lenticular flask (the earliest examples of which occur during La Tène A in Eastern Bavaria and Western Bohemia) though attractive is surely unsound. The Lower Austrian examples do not occur before La Tène B. Pittioni derives the lenticular flask from degenerate late Hallstatt derivatives of the Villanovan biconical ossuary found in Southern Styria and Lower Austria (cf. fig. 14a). This pre-supposes the existence of a late Hallstatt culture in northeast Bavaria, and west Bohemia (where the earliest lenticular flasks appear) more or less identical with that found in southern Styria and Lower Austria, which is far from being true. Certain of the types classified by Pittioni in his group of derivatives from the lenticular flask (*e.g.*, plate 1; 2, 4 and 7—all La Tène c) show greater affinities with northeast Bavarian La Tène A forms other than the lenticular flask (*e.g.*, Lindenschmidt, *Altertümer unserer heidnischen Vorzeit*, v, pl. 50, nos. 897, 899, 901). Further, the La Tène c vessel from Wolfsthal (pl. 1, 2) resembles the La Tène A urn from a recently excavated tumulus at Maxglan near Salzburg (cf. *Wiener Prähist. Zeitschr.*, xvii, 1930, p. 39).

Wimmer's excursus on the La Tène burials from Guntramsdorf with their contracted skeletons and trepanned skulls is of great interest. In connexion with the latter one is reminded of the trilobe cranial amulet found in a La Tène context at Somme Bionne (Marne). Similar amulets, but in bronze, occur in the late Hallstatt cemetery at Les Jogasses, near Épernay.

J. M. DE NAVARRO.

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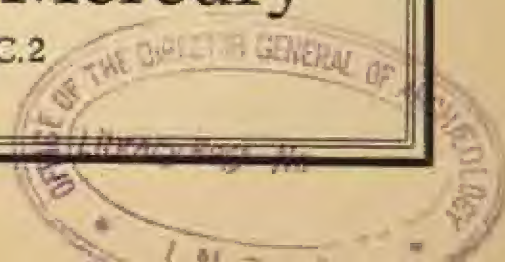
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HISTORY

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assisted by C. H. WILLIAMS, M.A.

Articles:

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Antiquity

A Quarterly Review of Archaeology

VOL. V No. 19

SEPTEMBER 1931

Editorial Notes

AS we write the excavating season in England is in full swing. Verulamium (St. Albans), Colchester, Richborough and Hembury are all sites of first-rate importance, and they are all, needless to say, in good hands. In Wales the prehistoric hill-fort of Llanmelin above Caerleon is again being attacked, and on Hadrian's Wall the *vicus* of Housesteads and the fort of Birdoswald. It is not without significance that at four of these seven sites attention is being directed to native settlements outside Roman towns (or forts). In the Cotswolds new ground is being broken at Salmonsbury, outside Bourton-on-the-Water, where a small walled town is being excavated. This, too, is an outstanding site, and it has yielded both Roman and pre-Roman remains.



If the season of 1932 is equally eventful—and already it promises to be—we shall have plenty to show our guests during the International Congress of Prehistoric and Protohistoric Studies which meets in London next summer (25 to 30 July). It is gratifying to know that the preliminary discussions in Berne have had this satisfactory result, for it was no secret that certain difficulties had to be overcome. Gatherings like this serve a useful purpose if they make known to one another the real workers in a common field of research. The

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best results are often achieved as much by formal and informal discussions as by the reading of papers. At the ideal Congress, as at the best dinners, there would be few speeches but many opportunities of personal intercourse.

The Congress may well prove to be a landmark in the history of archaeology: for a new start was made at Berne. The representatives of sixteen nations agreed that it would be both easier and more desirable to found a new Congress than to revive the old one. This bold, but obviously right, decision was the inevitable outcome of recent events, and we feel sure that, under the capable direction of its permanent Council, the new Congress will have a prosperous career. The British representatives on the Council are Sir Charles Peers and Professor J. L. Myres, and the British secretaries Professor Gordon Childe and Mr Christopher Hawkes.

There was a friendly argument at Berne about the title of the Congress itself (with its implications)—whether to retain the old one (*Congrès internationaux d'Anthropologie et d'Archéologie préhistoriques*) or invent a new one. The second course was almost unanimously adopted, and the new title is International Congress of Prehistoric and Protohistoric Studies. We think the decision was a wise one. In theory, no doubt, the mingling of archaeology and anthropology is quite proper, but in practice the fusion is often very incomplete, and is not likely to be assisted by the holding of a joint Congress. There are however certain aspects of anthropology in which archaeologists are directly interested—such subjects for instance as the megalith-makers of Assam or the cave-dwellers of Tunisia. Here are found living survivals of primitive cultures, which contribute directly to an understanding of prehistoric conditions. We are glad that, under the new constitution, such subjects will not be ruled out. They are on quite a different footing from the unrelated study of primitive customs and the anatomy of the human body.

For instance, a motion-picture like Mr Hilton Simpson's of primitive life in the Aurès mountains of Algeria falls well within the scope of the Congress. From such displays it is possible to learn more about the sort of life prehistoric man led than from many archaeological

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papers. For it must be confessed that lectures with a 'human touch' of this kind do much to relieve the monotony of technical discourses, and are always well attended by both specialists and the general public. ANTIQUITY has consistently advocated the policy of flood-lighting the past by means of the present. We believe that much anthropological research, however valuable in itself, does not achieve this result, and had therefore better be left to its own specialists.



One of the inevitable recurrent by-products of excavation is the controversy about leaving excavations open, as opposed to filling in. This cropped up three years ago in the London papers, and the pros and cons were stated by an experienced digger. Theoretically, the best course to adopt after uncovering the ruins of a town, palace, temple, or other building, is to leave them open for inspection under suitable weatherproof protection. The classic instance of this is the Palace of Minos at Cnossos in Crete. Here protection, admirably combined with a minimum of legitimate restoration, has been carried out in irreproachable style by Sir Arthur Evans. In this country similar conservative measures have been carried out by the Ancient Monuments Branch of H.M. Office of Works, whose achievements in this direction are still too little appreciated. (In order to realize what we owe to an enlightened policy of conservation, critics should watch some southern craftsman reconstructing the past from a single brick or from a few loose tesserae).



But the argument is not one which can be profitably conducted on purely theoretical lines. Those who advocate the leaving open of ruins should visit some of the Long Barrows and Roman Villas that were ravaged and left desolate during the last century. Rain, frost and vegetation will soon have destroyed them utterly. In nine cases out of ten it is a duty to re-cover the remains with earth, and in the tenth to construct some weatherproof protection. This practice is now pretty generally observed in Great Britain, but the difficulties to be met are sometimes forgotten, and no harm will be done by restating them for the benefit of the interested parties. Needless to say we have no particular modern instances in mind.

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Our National and other libraries are used so generally that we make no apology for giving our support to the Society of Friends of the National Libraries which has been formed. Everyone knows that libraries are the last institutions to receive proper financial assistance, and the amount allotted from public sources is ludicrously small for the services which are expected. From time to time we are informed that such and such a collection of papers of the utmost importance for the study of National History is likely to leave the country, or that books of great rarity are to be offered for sale, and that the ordinary funds available are inadequate to acquire them. It is in such cases as these that the Society now formed will be of use. Just as the National Art-Collections Fund has saved many a masterpiece for England, so may we hope that the 'Friends' will become as great a force in acquiring documents and books which, on account of their historical, literary, or bibliographical interest, should become National property.

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The word 'National' does not imply that such purchases will necessarily always be made for the great libraries. It is proposed to frame the constitution of the Society so that assistance may be given to university, municipal, and other libraries, which in their several capacities serve the needs of the community at large. We welcome the happy idea of including them.

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To be really effective, wide and generous support is required and we feel sure that this will be forthcoming, even in these difficult days. Inquiries concerning the Society, and subscriptions, should be sent to the Hon. Secretary, Mr H. D. Ziman, British Museum, London, W.C. 1.

History in Art

by SIR FLINDERS PETRIE

Edwards Professor of Egyptology, London University

WHEN we look at the great diversity of man's activities and interests, it is evident how much space they afford for reviewing his history in many different ways. To most of our historians the view of the political power and course of legislation has seemed all that need be noticed; others have dealt with history in religion, or the growth of mind in changes of moral standards, as in Lecky's fine work. In recent years the history of knowledge in medicine, in the applied sciences, and in abstract mathematics, has been profitably studied, as affording the basis of civilization. The purely mental view is shown in the social life and customs of each age, and expressed in the growth of Art. This last expression of man's spirit has great advantages in its presentation; the material from different ages is of a comparable nature, and it is easily placed together to contrast its differences. Moreover it covers a wider range of time than we can yet observe in any other aspect of man's past. No doubt it touches only a portion of man's scope, but it is as essential to his nature as any of the other aspects that we have named.

The appreciation of Art has varied with the taste of the times. In the Renaissance the sculptures that were retrieved were used as adjuncts to the social life of the age; they served to decorate the villas and gardens, they were fitted into the current requirements, were restored, or polished, or merely used up like any other materials subservient to the wishes of man and the life of the times. To our present taste, all things ancient are used to enable us to penetrate to the life of their own times; we humbly set ourselves aside, and seek for the labours of the past, not to add to our own productions, but to try to see life from the ancient point of view. We wish to think like a Greek or an Assyrian in contemplating their work and, by means of it, to enter into their life as much as we are able.

Some of us may sympathize most with the crude struggles for expression, as in the cubism or jazz of our own day; others value more

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the freshness of the final trace of archaism in the *quattrocento* and the Maidens of pre-Persian age, or the archaistic work of Hadrian and of our pre-Raphaelites ; at the other extreme, our grandfathers preferred the full-blown expression of Correggio or the pomposity of Rome. Whatever stage of the cycle of Art was cherished mattered little—the cycle went on as it had gone on in all ages, through growth and decay. Whether the brilliance of spring, the fulness of summer, or the rich fruit of autumn were more pleasing, the 'Great Year' could still be observed from any point of view. The last two generations have given us the power to trace these cycles of Art through a far longer range than our fore-runners could grasp. Eight or nine revolutions of civilization are in our view, and from them we can trace the similarities of their course, and so perceive the general make-up of the mind of man, separating that which is constitutional in his life from the casual changes of his circumstances.

To understand these changes, we need to have the material facts laid before us in a comparable form, without mere redundancy but with complete coherence, so that each stage can be grasped in its source and its fruition. Such an exposition of special periods is needful for study, quite apart from mere samples in general volumes which give first impressions.

We may notice here some recent works of both these classes. One of the most important is *The Sculpture and Sculptors of the Greeks*,¹ by Miss Richter, curator of Classical Art at New Haven. This provides an excellent series of over seven hundred photographs, chosen and arranged to give a real exposition of three hundred pages of text, and no ways a mere picture book like too many publishers' ventures. The text deals with various branches of the art, and with the history of the sculptors. For every fact and opinion quoted, full references are given, and a valuable 'tentative chronology' states the essential facts for judgment on each example by historical references and details. Thus we have here the material for outlining other questions, which are not debated or suggested in the text, but which enable an enquirer to handle in one volume some matters which would otherwise need a library of folios.

Two prominent questions we may glance at here, for which this volume supplies first aid. The fashion of the iliac line, or the emphasis of fulness over the hips, extending into a strong basal line to the abdomen,

¹ Milford, Oxford University Press, 1930, 55s.

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is only too obtrusive in later statuary. No such feature appears in the earlier work; the hips and groins are treated perfectly naturally down to 430 B.C., as in the Parthenon, and such naturalism extended to 350 B.C. at the Mausoleum. The emphatic iliac line first appears in 420 B.C. at Phigaleia, and it spread in fashion until it was brutally emphasized in Roman work. The appearance of it in Roman versions of Myron and Polykleitos (*circa* 450) are probably due to Roman treatment in the copy.

A subject of the widest implications is the type of facial expression. The archaic smirk prevailed down to 500 B.C., but began to fade into a smile then, and this change was at 490 in Aigina. There followed a heavy type of face from 490 to 480 (Euthydikos maiden and Eleusis maiden); suddenly an entirely free and graceful treatment was born between 480 and 470, as seen on the Ludovisi throne. What caused this change? The historical crisis then was the Persian invasion, and the leaving of the wreck of the army of Mardonius, said to be 300,000 Persians, abandoned in Greece to form part of the great Athenian slave population of 400,000—many times more than the free citizens. It must have been Persians who toiled in all the great quarrying and sculpture at which Greece laboured in the years following the invasion. The treasures of camp furniture were all left behind in the rout; the great king could take but little when fleeing to the scanty shipping, and only a minority of the invaders could hope to return when the bridge was gone. Asia was left derelict in Europe. What was the effect on Greece of all the sudden acquisition of wealth and artistic treasure and skilled labour?

This Persian element is entirely ignored by Dr Richter. She omits the Satrap on his sarcophagus of Sidon, worth any number of figures of the mourner's sarcophagus. Yet the Perso-Greek work of the Satrap is supreme in the highest qualities. Its differences from Greek work must be credited to Persian art. Its characteristics are reserve and dignity: the expressiveness of attitude is seen even in a back view, like Watts' rich man sorrowing; also repression of detail, the absence of any hard definition, like the broad washes of a master in water-colour. Further, the whole surface of the scenes is deliberately frosted, with a roughened face to the stone; this is not due to accidental solution, as it is absent on the surfaces above, and below on the leafage border. The style relies on expression by general masses, without dependance on detail—a character never attained in Greek work. Such was the content of that flood of Aryan art poured into

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Greece ; no wonder that such influence acting on the Greek spirit made the immense change from the tentative style which preceded the invasion, transforming it into the finest work known to us.

A very useful chapter contrasts the products of forgers with the original sculptures, and illustrates the obvious failings of copyists, both Roman and modern. The banality and trivial style of modern attempts is only too evident, and I confess that on ground of expression one may doubt some of the sculptures which are accepted here as ancient. There may, however, be uninspired work in any age. The skilful creations of Dossena are barely mentioned ; his good faith fortunately escaped the smirch of the dealers who exploited him, and he was commissioned by the Government afterwards.

This whole work, within its scope, is most valuable as summing up the evidences of data for monuments, and giving most of the comparative material arranged, with full references. It contains essentially what an archaeologist requires for the definition of style, and dating, in sculpture.

Another work, even more comprehensive, is Dr Swindler's *Ancient Painting from the earliest times to the period of Christian Art*,² which gives 640 photographs to a full discussion in text. The width of range, however, is scarcely proportionate ; the author's interest lies in classical art, which occupies five-sixths of the work, leaving but little for such important sections as Prehistoric Art, Egypt, Iraq, and Persia. These need more detail if they are to stand alongside of the meticulous treatment of Greek vase painters.

In the Egyptian section it should be observed that in the very early tomb of Hesy are the first painted figures of offerings of the actual size, being thus the painted substitutes for the real objects. The depicting of woodwork there shows most careful imitation of the grain of the wood. The ceiling patterns of the palmetto, spiral, and fret, which are quoted as being of the XVIIIth dynasty, are more than a thousand years earlier at Qau, as already published five years ago. The disputed question of the high lights on figures cannot be judged from the present state of the Amarna fresco of the princesses in the Ashmolean, as that has been altered by varnishing. When freshly found, the high light was clearly a powdering with orpiment on the red-brown surface.

² Milford, Oxford University Press, 1930, 25s.

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The background, described as covered with a diamond pattern, is really the embroidered cushion on which the queen was seated.

The Syrian influence in the art of Akhenaten is here supposed to have been transmitted from Crete, but others have recognized that the work is not to be traced to Crete. Since the discovery of naturalistic Syrian work, full of animation and new detail, at this period (Beth-pelet ivory), the Syrian origin of the Egyptian reform seems evident. The only colour plate for Egypt here is a late and uninspired work, copied without even the original spirit and character.

The debate whether schematic drawing is primitive, or a degradation of natural form, seems settled if we observe that children begin by attributing meaning to the simplest strokes, which are mere symbols to the mind; only gradually do they learn distinction of form. This would not, however, exclude degradation.

On the art of Greece a fair space is allowed to Crete, but the luxury of detail is given to the hundred and thirty Greek vase painters who are specified. The Hellenistic and Roman periods are also handled, but less fully. The influx of Persian workers and ideas is not recognized, but yet we read of 'the impetus which came into art after the Persian wars'. The succession of the arts is acknowledged; 'although sculpture had attained its zenith by the end of the 5th century, painting was not really in control of its media until the age of Alexander'. The same order of development is seen in the 13th century sculpture and 15th century painting in Europe, and also in the earlier cycles of art.

The influence of slave labour in general should be noticed, not only in Greece, but in the Roman slave raids; these brought in a mass of workers who imported their late Celtic patterns from Gaul, their plaiting patterns from Dacia, and their pottery decoration from Mesopotamia, and passed these on to the Roman world.

Roman painting occupies more than a quarter of the volume. The illustrations are mostly on a small scale, which may be justified by the usual lack of detail. In naming the types of the apostles, the constant distinction of character between Peter the priest and institutionalist, and Paul the prophet and evangelist, should be observed. The last survival of classical design in stucco reliefs of the 9th century at S. Pietro in Monte, deserves mention. In the discussion of technical methods at the end there is some confused chemistry needing mineralogical revision. The work supplies a valuable and necessary study of ancient painting as a whole. The Yale University Press has

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done a service by issuing such compendious volumes on painting and on sculpture as the two noticed here.

A much more extensive view is that of prehistoric man in *The Art and Religion of Fossil Man*,³ by Prof. Luquet. This work has the advantage of presenting the subject from a new point of view, and the geologist and archaeologist may ponder a fresh handling of the motives of prehistoric work by a professor of philosophy. In estimating evidence this is an advantage. With a large amount of illustration, and abundant references, we find here an appreciation of all the facts, carefully and cautiously balanced without any prejudice. The intention with which the figures were painted or engraved is discussed, and the conclusion is 'To my mind the sorcerer-artists had been inevitably preceded by artists pure and simple, and I consider it is impossible for figured art to have been anything but a disinterested activity in its initial phase'. 'The attribution of wall paintings to a decorative intention does not seem to me more satisfactory than their justification by a magical view'. 'Aurignacian figured art is exclusively . . . dictated by the pleasure the artist took in creating images of actual beings'. This seems a very judicial summing up on all the evidence discussed.

The excessive development shown in female figures 'may be explained by a naturalistic rendition of the actual aspect, at most accentuated in the sense of certain aesthetic ideals', and it is therefore no evidence of a devotion to fecundity.

The contracted burials are discussed, but without any allusion to the obvious origin in the huddled position of illness and death, like the sleeping girl from Tarkhan in University College, London.

The great question of the general abilities of prehistoric compared with modern man, is scarcely touched. But we must not conclude that what we happen to find is the utmost that was realized. The whole of the woodwork and plaiting has vanished. The trimmed bones (fig. 96) are no ruder than the natural baboon-like flints treasured in the temple of Abydos along with fine carving and glazing; the drawings are better than those on Amratan pots which are excellently shaped and baked; the figures adapted to the shape of material (p. 141) are adapted like Chinese carvings in blocks of ivory or jade; they saw resemblances in natural forms, as we see faces in the fire, or clouds

³ Milford, Oxford University Press, 1930, pp. 213 and 119 figs., 23s.

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very like a whale. None of these matters prove a low grade of ability in other ways.

The debated status of the Solutrean work is frankly placed as an interlude in the Reindeer Age, between the Aurignacian and Magdalenian, and 'seems to have existed only in certain regions'. 'North of the Pyrenees the Capsians are known as Aurignacians, and were modified in time by the Solutrean and Magdalenian cultural influences'.

Some resources of the translator are very dubious. Graves are rendered as 'ditches', 'costuming' is used for costume, qualities of spirits are said to be 'lent' instead of attributed, an abuse of a word is called 'abusive'. 'Crayons' for amulets, and 'oligiste of iron' are not within the range of English. This work is the best study of prehistoric mind as such, beyond the studies of the art already given us by Parkyn and Baldwin Brown, and it will long fill an honoured place in our resources for reference.

A very miscellaneous work is the last of six volumes on the history of Art, devoted to all the countries outside of Europe, *Die Ausser-europäische Kunst*, edited by Springer, and written by six specialists.⁴ The divisions are China, Japan, and India, together occupying nearly one half, Islamic art nearly a third, and the remainder for Africa, America, Malay and Pacific art. The volume gives a useful general view of style, but only the Islamic section is sufficiently detailed for study and comparisons.

In the section on China there is not enough to trace the stages of rise and fall of different periods, but the main features are seen, as geometric design before 500 B.C.; the Han period with abundance of figures, 200 B.C. to A.D. 200; the first Buddhist influence 2 B.C., and the full course of it A.D. 424; good figures about A.D. 450-600; the Sassanide symmetry of the 5th century; and the landscape style beginning A.D. 1000. All through there is no trace of Siberian influence, and the principal outside style is the Perso-Assyrian of 600 B.C. which began the animal motives of the Han period.

Japanese work is later, more personal and expressive, and revelling in fantastic impressions of landscape and spirited animals. About A.D. 1300 was the finest age for naturalistic carving, closely parallel to the best European period of sculpture.

⁴Leipzig, Alfred Kröner, 1929, 400, pp. 751 and 812 text-figures and 16 colour plates, 40s.

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India looked to the West rather than the East. The stone and rock cutting is all derived from wooden prototypes. A strong Persian and Greek influence appears in 250 B.C. One of the first purely Indian figures is a fan-bearer of about 200 B.C., with refined handling as in Greek work; a similar female figure of A.D. 200 shows the rapid decline of delicacy, due to the Bactrian invasion of the beginning of our era, most plainly seen in the coarse figures of the conqueror Kanishka about A.D. 100.

A strong Roman style appears in reliquaries, the circular pyres with relief figures, from the 1st century onward. Another class of work is seen in the great stone imitations of wood carving, at about A.D. 150, familiar to us from Amravati, linked always with Buddhist motives, which henceforward are dominant. India regained independent style in the Gupta age, from Sandra Gupta A.D. 320, when the great fashion of rock-cut temples begins, with degradation in taste.

The strongest section here is that on Islamic art, covering many countries and due to many sources. An entirely new spirit enters the religious architecture with the congregational mosque. That is essentially a holy well in a court with an area of pillars around, copied apparently from a palm grove bordering the sacred place. The whole Mecca motive, and the mimbar pulpit, is an extraneous addition. When tombs, palaces, and forts were in demand, they were borrowed from Byzantine and Syrian architecture. The elaborate arabesques of Mshitta are like those of the ivory throne of Maximian at Ravenna, and derive from Syrian vine patterns of A.D. 100; together with Graeco-Oriental style of the Nikopol vase, and the tomb of Petosiris, about 300 B.C. The geometry of that palace is essentially Syrian, based on the hexagon.

Another strong influence later was the fulsome Spanish taste, which controlled Moorish work, and reflected on the East. Turning to the African side, the carving at Kairwan has no trace of African influence but is purely of Roman origin. The northern motive of the band of balls rules at Samarra, where also the influence of the north may be traced in the drapery (fig. 390) like that in Anglo-Saxon drawing.

In the mid-Islamic age, the Seljuks brought from Central Asia, about 1100, the fashion of tower-tombs, which continued for four centuries, and seemed to find a surprising reflex in Central America (fig. 720). The fashion of domes was later, and their Perso-Mongolian style seems obviously copied from the helmets of that age (taf. x).

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On entering India, Islam brought its own motives, and there does not seem to be any trace of Indian feeling in the decoration of Delhi or Lahore. On the other hand, the conquest of Constantinople entirely dominated later architecture by the magnificent example of Hagia Sofia.

The African section begins with an astonishing piece of wood carving of animals and men in action, as complete figures in the round. It is in a purely naturalistic style and bears no resemblance to the stolid clumsiness of most African work, though from Camerun; it rather seems inspired by the style of the ancient figures in gold work which were offered as tribute from the Sudan to Haremheb. The principal foreign strain in Africa is the Roman work, which brought in the plait patterns of the North and passed them on to the Gold Coast. In only one instance a trace of Egypt may perhaps be seen, where two tall plumes on a head may come from the figure of Amen. The known links of custom between Egypt and Africa are not reflected in the art, and are probably due to Egypt inheriting a basis of African ideas, and not to later transmission in the reverse order. The bulk of African work is simply of native growth unaided by outside example. The recent centuries have brought European influence, beginning with that of Portuguese traders.

America is still a vast uncharted sea of endeavours, in which we wander far without any clear landmark of the Old World. The heavily stratified architecture of Southern India and Java seems to meet a parallel in Yucatan; the mood of Mexican figures seems most akin to early Chinese work; the Cross of Palenque may well have come from Syria by means of Nestorian missions. Yet we wait for any clear link to guarantee a direct transmission.

The fine masonry of Peru is amazing, as in the Sun temple of Cuzco, and Mexico shows bold design in simple masses in the great platforms of Teotihuacan. The vigorous, clear lines of the pottery from Cuzco is of the first class. The main run of Mexican figure work is however, obviously the product of a mechanical degradation of a former living art, the vital period of which has not yet been found. As a whole there is here—as in China—a great poverty of motives, and the resort for detail lay in profuse geometrical repetitions, as in Yucatan. We must await the classifying of styles, and the historical clues to the successive periods, before we can grasp the central meaning of the New World.

Lastly, the Polynesian section is occupied with native attempts, the only guidance of which came from India through the Malays.

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The whole work is a useful conspectus of non-European art, and the bibliographies will lead the reader to fuller sources for study.

In all these volumes we feel that we are but groping among a complexity of detail, at such close quarters that we cannot grasp a unifying view, or see the meaning of changes or the underlying causes. We require some key to the principle of the series of changes. It is evident that a vast complexity of influences and motives besets the mind of man.

Now in all such cases of complex phenomena, the regular method of modern science lies in the search for the meaning, by noting the recurrences, or period, which may be traced, in order to throw light on the process and distinguish the causes. The obvious connexion of the tides with the moon is complicated by other elements, and elaborate record of variation, and analyses of recurrent causes, are needed for the exact prediction of tides. The relation of the monsoons to the solar year, the cycles of sun-spots and their connexion with weather, the longer cycles connected with planetary disturbances on the sun—all of these are studied almost entirely by observation of periods. So in social matters the trade cycles of prosperity and difficulty are a subject of deep anxiety at present, and need careful historical analysis of past causes; the cycles of diseases are the special care of medical science, as in recurrence of small-pox or measles; the cycles of animal pests, as locusts or voles, are being traced in order to deal with the causes effectually. So also must we study cycles to understand History.

An important social cycle, which has not yet attracted notice, is that of austerity and laxity, or economy and waste. Those who knew Victorian self-help, thrift, and decency, which built up England to vastly increased strength and prosperity, are now aghast at the lavish living at present, which is squandering the reputation and stability then acquired. The best defined epoch in this periodic change is the break-down into waste, and the reduction of resources. This may be stated at about 1920, when the enforced civilian economy during the war was released with a rush, and the military wastefulness of war invaded all civil life; this was also the turning point of laxity of moral standards. Looking back we see a parallel period of change at about 1790, when the ideals of that century were crumbling, and the influence of the Revolution made a standard for an important party, and was carried forward after the death of Pitt into the excesses of the Regency.

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A notorious age of laxity began at the Restoration in 1660. The earlier pages of Pepys detail the change of view, the literature became rank, the Puritan thrift vanished, and England fell under foreign influences. The previous age of squandering was at the suppression of the monasteries, scattering all the thrift of the country which had survived through the civil wars : probably 1530 or 1540 may be stated as the turning point. The change was overdue, as not a single endowment had been given to monachism in London for a century past.

The leaders who built up the thrift of the Nation are equally obvious. Queens Victoria and Anne (who led a moral crusade), the Puritans, and Henry VII.

The intervals of the periods of waste or laxity are

End of Great War	1920	—130
French Revolution	1790	—130
Restoration	1660	—123
Dissolution of Monasteries	1537	

If we seek to carry this view back the similar periods may be seen at

	1537	—119
Henry V, lavish Normandy war	1418	—111
Edward II, lavish reign ..	1307	—113
Richard I, heavy taxation ..	1194	—107
William II, lavish reign ..	1087	

The economic state of the Saxon period is hardly known, and was interrupted by invasions, but on reaching firmer ground we again find lavish periods at regular intervals.

Vandal sack of Rome ..	445	—121
Building Constantinople ..	324	—138
Commodus lavish	186	—124
Nero lavish	62	—124
Caesar mob manager ..	— 63	—126
Plunder of Antiochus ..	—189	—119
Plunder of Etruria ..	—308	

A lavish period is preceded by an economist who built up the thrift of the country—Diocletian, Antoninus, Augustus and Sulla. A recurring interval of this kind has long been known in popular phrase in Lancashire, 'It is three generations from clogs to clogs'.

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The energy and self-denial which builds a fortune, is lost in the grandson, who falls back into the condition of three generations earlier.

Some readers will perhaps regard these changes as having been due to the personal influence of the type of rulers, and look on the monarchs as ruling the ideals of their age. But in each case it is plain that the tone of the general population was thoroughly the same as that of the ruler, and such rule would have been impossible had not the austerity or laxity of the ruler been supported by popular opinion. The age made the ruler possible, and each of them in turn became the popular figure head of the nation.

In contrast to this brief cycle of repeated changes of ideals within a single population, there is the long cycle of change produced by alterations of race, usually due to conquest and subsequent union of the races. This 'Great Year' of a race is the most impressive spectacle of all history, when we view a great civilization rising to its summer and then fading away, until it has lost its vitality, and the people are only fit to be overridden by the invasion of a more virile stock. In most cases, however hard and cruel the change seems, yet a better product results from the union. The worst failure was that of the Mongol invasion in Asia, which founded no beneficial result. The Arab, overrunning the Mediterranean basin, at least organized a better civilization in Spain than any of that date in Europe. The blight which fell on other lands was due to Justinian's destruction of the Goths. Had that most capable people been allowed to redeem the decadence of the Roman Empire there would have not been any Arab conquest, and we should have been spared centuries of confusion across all Europe.

As has been shown twenty years ago, each 'Great Year' of civilization blossoms in different flowers of ability in succession; the earliest to bloom is that of Sculpture and Architecture, as in 450 B.C. and A.D. 1240; next came Painting, then Literature, Music, Mechanics, theoretic Science, and lastly Wealth. When there is no survival of useful abilities, then the race is doomed, and only lives on its prestige and savings, until its wealth attracts a more vigorous people. *Mene, Tekel, Upharsin*, may be seen written on every full-blown civilization.

This series of changes throughout history—written most plainly in its Art—has been lately put on a firmer basis by fresh discoveries in Egyptian archaeology, which show how the northern invaders (xv and xvi dynasties) in the Delta were contemporary with the older

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inhabitants in the south (XIII, XIV, XVII dynasties). The best preserved product of each cycle is the stone sculpture, and the most distinct epoch in that art is the end of archaism. This test point recurred at the dates of A.D. 1240, and 4300, 3750, 2550, 1550, 480 B.C. in Egypt. The usual period was 1100 years; strangely enough this period was already formulated by the Etruscans and called by them the 'Great Year'. The latest interval, of 1720 years, was delayed by ejecting the Gothic mixture, and letting in a second barbaric movement of Lombards and Arabs. The succession of stages in these civilizations, stated in *Revolutions of Civilization*, need not be detailed here.

There is yet another, and greater, periodic change to be noted in the supremacy of a whole stock of mankind. In the early ages there were many different stocks, *sapiens*, *neanderthalensis*, *capensis*, to say nothing of the Javan or Chinese primitive. So in historic times there have been ethnocracies—as we may well call them—of dominant stocks. The Mongoloid Sumerian lasted supreme down to the rise of the Semites under Sargon and Naramsin. The Semitic races ruled the world until the rise of the Aryan stock in the Persian empire, the Ionian Greek, and the Swamp of Celts over Europe. The Aryan has thus led the way for over two thousand years, but doubtless his power will pass away as the other stocks have passed. The present affection of this stock for the barbaric art and jazz of lower races marks a loss of its own lineage of ideals, which must expose it to decay.

Each ethnocracy may last over several civilizations; in the last group there were the Persian, the Graeco-Roman, and the Northern dominance; in the Semitic group were the Amorite, Babylonian, Hebrew, and Assyrian leadership; the Sumerian group we can already see in Iraq and India. If we can penetrate further we may find the Solutrean-Neolithic group long lasting, interrupted in the West by Magdalenian cold and barbarism. Other groups are gradually coming to light over large areas, and we should interpret the distant past as the general type of a series of ethnocracies, each containing three or four successive civilizations of cognate races.

Thus in all the organization of living endeavour we see the growth and decay of a single life amplified in the austerity fading into laxity in a few generations—in the growth and decay of each cycle of civilization and art—in the rise and decline of each of the great ethnic divisions of mankind—all resembling the still larger rise and fall of each of the great phyla of molluscs, fish, reptiles, mammals, and primates, which successively dominated the world.

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In all this research on the nature of civilization, we best find History in Art. The higher products of ability and imagination which we rank as Art, constitute the closest test of mental advance, and the apparatus for discriminating the changes in civilization necessary for our study. The volumes noticed here give much of what is required for the Classical ages. For other civilizations and lands, the transference of designs of decorations, and the series of changes of each pattern, need to be widely collected. A beginning has been made of a classified series in *Decorative Patterns of the Ancient World*, and when the three thousand examples grow to many times more we shall have an effective means of searching for the movements in time and in position, of the ideals of Early Man.

Grimsditch and Cuthwulf's Expedition to the Chilterns in A.D. 571

by MICHAEL W. HUGHES

IN its original form this paper was prefaced with an account, painfully extracted from the somewhat unsatisfactory descriptions in the Historical Monuments Commission's volumes for Herts and South Bucks and in the *Victoria County History*, of the existing portions of the earthwork with which I proposed to deal. For the South Oxfordshire Grimsditch, which I ventured to associate with the continuous work which runs through Herts and Bucks, I relied upon Plot¹ and Burn², and some of the original documents used by the latter.

As readers of *ANTIQUITY* are already aware, the Editor, moved by the conviction that the earnest seeker after truth in this field at least deserved to be supplied with the facts, has during the past two years personally investigated the whole of the remaining fragments of earthworks in the district, and I am therefore able to refer to his paper in the June number, and to the map which he has compiled to illustrate this paper as well as his own, as furnishing a succinct and authoritative statement of the main features of the Chiltern Grimsditch, by which my arguments stand or fall.

Ever since I first began to interest myself in the Saxon settlement of Bucks, I have not ceased to hope that it might be possible to demonstrate that the Anglo-Saxon Chronicle was, so far as it went, veracious; because I could see no limit of drift if this sheet-anchor dragged. So far back as March 1919 I wrote an account of the West Saxon invasion designed to show that there were no solid reasons for rejecting the Chronicle narrative. The late Mr W. H. Stevenson read the paper and expressed the opinion that it ought to

¹ *Natural History of Oxfordshire*, 1677, pp. 316, 317.

² *History of Henley-on-Thames*, pp. 14-17. He cites Stukeley's and Horsley's references.

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be printed; although, as he pointed out, its basis was almost wholly hypothetical. It never was printed; and I do not regret it; for while I have abandoned many of the views I then put forward, I am now, I think, in a position to support the remainder by reasoning rather than by hypothesis—to build up the case on the lines which would be necessary if it had to be proved in a court of law. At the same time, I admit that I have briefed myself on behalf of the Chronicle; and counsel for the other side may have potent arguments up his sleeve. However, it is encouraging to find that the Editors of the Place-Name Society's volumes, working on different lines and with different material, continue to reach conclusions which support the Chronicle.* But the Society has not dealt with Grimsditch. There is, indeed, little which they could have said of it, though they might have given the earliest date at which the name occurs; but it was not even mentioned, under that name, in the volume on Bucks.

I have been compelled to work almost entirely from the map; and for this purpose I have found the combination of the $\frac{1}{2}$ -inch layered and contoured Ordnance Survey map with the old 1-inch, to give the parish boundaries, very fruitful in suggestions.

The salient fact which emerges after prolonged contemplation of the map is that the Herts and Bucks Grimsditch throughout almost the whole of its course runs closely parallel to one great road or another; this is so marked that the conclusion that the association is more than casual is difficult to resist. A reference to the diagram will illustrate my meaning.

With regard to the South Oxfordshire Grimsditch, Mr Crawford has revised the Ordnance Survey maps upon which I had worked, and deprived me of some of my material. However, it remains true that so far as it is traceable this also seems to be associated with a road—the road from Wallingford to Henley. It is indisputably established by ancient deeds in the possession of the Corporation of Henley, many of which are quoted by Burn, that an earthwork known as Grimsditch was in existence as early as the late thirteenth century and as late as the late sixteenth, actually in the town of Henley. It lay to the west of Bell street, and if continued to the east would have

* Place-Name Society, Bucks, p. XIII; Beds and Hunts, Introduction; Mawer, *Problems of Place-Name Study*, 1929.

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run down New street.⁴ It is said⁵ to have continued on the Berkshire bank, but I cannot say what evidence there was for this.

The attachment of Grimsditch for the roads is not mere idle sentiment; nor is Grimsditch part of the road system. For it cuts across the Icknield Way, for example, on the Mongewell-Newnham Murren boundary. So that it is part of a system, or, shall I say, the evidence of a policy, based on something other than the roads, to which however the roads for part of their course were of value. It would thus be later than the roads, which are part of a general system based on the natural features of the country.

I propose to assume, as I think I safely may, that the earthwork which runs from Berkhamstead to West Wycombe is a homogeneous whole. I do not claim for the Wallingford-Henley work more than that it may be part of the same scheme, and I do not know that this suggestion can ever be definitely proved or disproved, unless the spade decides, or a very careful study of the workmanship and construction of these dykes makes it possible to conjecture with some degree of certainty that the same brain devised the different sections.

It must be further assumed that Grimsditch was conceived and carried out from the Aylesbury side of the Chilterns; because the work faces away from Aylesbury.

It is not a rampart hastily thrown up in battle, nor indeed is it likely that it was constructed during the course of a campaign. It is too long for defence, but not too long for a boundary which might be patrolled. If it is a boundary—and that it must be, whatever else it may be in addition—it represents the attainment of an ambition; a final achievement, designed to be permanent; and it is evidence that its makers were conquerors, for the fat valley lands are within it, and the hilly wastes without.

Again, it is to be predicated that Grimsditch was thrown up in open, or at least cleared, country. No one sites a rampart boundary in a wood. But trees grow naturally on ancient earthworks, as for

⁴ Burn, *op. cit.*, p. 14; e.g., Bouedone to Walenger, c. 1300; *totam terram meam extra cortillagium meum que iacet inter terram quam Alanus Belami quondam tenuit ex una parte et terram quam Gunnilda Chaloner quondam tenuit ex altera extendentem a dicto cortillagio . . . usque ad Grimesdig'* . . . ; Colchestyr to Deuyn and others, 1449; *quandam parcelam terre arabilis que iacet in le Chyrchecroft inter terram Johannis atte Lee Smyth ex parte boreali et Grimydich' ex parte australi* See also *Catalogue of Ancient Deeds*, vi, c. 4609, 6588, 7129.

⁵ Plot, *op. cit.*, p. 317.

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instance upon barrows, because they are left untroubled by the plough. The woods, therefore, which are now to be found on and about parts of Grimsditch were not there when it was completed. It has been the traditional belief that the Chilterns were largely waste and uncultivated, and thickly covered with trees; I think their wildness and inaccessibility have been much exaggerated, but it is certain from the place-names ending in *leah*⁶ that in Saxon times this was a district which required clearance before it could be cultivated; and it is demonstrable from Domesday that the villas beyond Grimsditch were far less productive than those in the Vale, since their hidage is very noticeably lower in comparison with their acreage. Yet it is far more likely that the district resembled the New Forest than that it was covered by continuous woods, and there is no convincing proof that the Bucks Chilterns were an unexplored wilderness in Roman times; there is indeed proof to the contrary.⁷

I now come to what I cannot but regard as a very significant fact. The name Grimsditch tells us nothing more than that at an early date a supernatural origin had been assigned to the rampart. There is no evidence, so far as I know, that the name was applied to the Bucks work in pre-Conquest times. There is evidence that it was so used in Warwickshire.⁸ I know, however, of no pre-Conquest references to the Bucks Grimsditch under that name.⁹

But I have found the section which divides Great Missenden from Wendover described in the Missenden Cartulary as Fastendich, in a list of boundaries scribbled on a blank folio at the end of the

⁶ The fact that *leah* often meant a wood rather than a clearing in it has recently been emphasized by Professor Ekwall, *Bull. de la Soc. roy. des Lettres de Lund*, 1930-31, pp. 95-100.—Ed.

⁷ V.C.H. Bucks, II, 4.

⁸ Birch, *Cart Sax.*, 934; cited in Place-Name Society, Worcestershire, p. 126.

⁹ I have found in the Missenden Cartulary (f. xxxvi (50d)) the following grant; it is dated by one of the witnesses as between 1170 and 1179 and is identified by other documents as relating to land in Great Hampden;—Alexander son of Richard de Colewurda confirms to the Abbey the grant which his father and mother made of one virgate of land nearest their land of Hanora. And he makes in addition a grant of a certain increment adjoining the said land out of his demesne with 4 acres which he gave them in exchange for 4 acres which he retained. . . . And the increment and the 4 acres and the virgate are bounded by *fossatum eorum quod extendit per Waltringden et signa lapidum quorum unus est positus in Waltringdene & alius contra illum positus est ultra Hoacmer super Grimesdic ita quod haia eorum est posita super crestam fossati*. Hoacmer may survive in Oakengrove. Hanora is Honorend.

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volume,⁹ at a later date than the main body of the Cartulary, which was compiled in 1340. This name also occurs¹⁰ as the personal name of two *nativi* of Henry de Scaccario in Wendover in or about the early thirteenth century.

Again, it appears as the name of a tract of land in Bucks in 1197¹¹; and this tract is identified as being in West Wycombe by an agreement recorded on an Assize Roll of 1241.¹² Other references, showing the name in use in 1269 and 1477, are given in the Place-Name Society's volume on Bucks,¹³ where the name is translated 'stronghold

⁹ Harl. MS. 3688, at end. *Incipiendo apud Fastyngdich ubi fuerunt eundo Huntsgrene & ab Huntsgrene usque ad domum Johannis Astwik nunc Johannis Basingborne & sic ad domum (sic) Johannis Astwik usque le Gore Et ab le Gore usque ad grauam Ade Ladde & sic a Graua Ade Ladde usque ad portam Thome de Wedon Et a porta Thome de Wedon usque ad Chiveraylane Et a Chiveraylane usque Hoggemedde apud Sowthforde Et sic rediendo ad Sykmanstile & a Sykmanstile usque Grymesdene & a Grymesdene usque le thorne & a le thorne usque le Sandehgge & ab Sandehgge usque Deneshgge Et redeundo usque Honor Hacche & ab Honor Hacche usque Pedderesfeld & sic descendendo uenellam usque Grenemyle & Fastyngdich.* At present I can identify only Hunt's Green, but I think these places will be found to run from Grimsditch and Hunt's Green in a circle round Great Missenden. The Wedon family lived at Weedonhill in the sw corner of Chesham. Honor Hatch may be somewhere near Honorend Farm in Hampden, land near which was given to the Abbey about 1175. 'Grenemyle' was, I have some reason to think, in Wendover. The part of Martinsend Lane nearest Missenden Station is now known as Grim's Hill; but I do not know when or why the name was given. There was a Hugh Grim holding land in that neighbourhood in the thirteenth century, and the dene may take its name from him; and he may also be commemorated in the hill. [The same expression was used to describe the Froxfield entrenchments in South Hants; see Dr Grundy in *Arch. Journ.* LXXXIII, 96.—Ed.]

¹⁰ Harl. MS. 3688, f. LI (62) . . . *omnes terras quas Walterus de Fastendich et Willelmus de Fastendich de me tenuerunt in uilla de Wendouere . . .* On the same folio Will. de Festindich quitclaims to Missenden Abbey, to whom Henry's grant was made, . . . *totam terram quam tenui de Abbate et conuentu de Messendene in uilla de Wendouere ex dono Henrici de Scaccario.* This is the Chequers family from which the Prime Minister's country house took its name.

¹¹ P.R.O., Feet of Fines, Bucks. Case 14/1. 33. This fine was made between Will. de Widendon and Walt. de Fastindig', and concerned a half virgate of land in Fastindig'.

¹² P.R.O., Ass. Roll 55, m. 9. *Will. de Wyndendon' cognovit quod dedit concessit etc. Ricardo filio Mathi de Smalenden' totam terram de Festindich . . . Quam terram Rihilda de Festindich tenuit in uilla de West Wicumb'.*

¹³ p. 207. These references are as follows:—1269, July 22, Westm. Grant to Henry de Norwico, king's serjeant and his heirs, of free warren in his demesne lands in Lavenden, Baunfeld, Fastendich, and West Wicumb, co. Bucks. Cal. Charter Rolls, II, 123. 1476-7, Walter Bonham's estates include a tenement in Fastyngdiches and land in Westwicumb, Bucks. 1479-80, Estates of John Leynham, kt.; as those of Walter Bonham. Rec. Comm., Inq. Post Mortem, IV, 380, 397.

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ditch'. The Editor of ANTIQUITY suggests that 'strong ditch' would give the sense more faithfully; or, better still, 'The Rampart', or 'The Dyke'.†

There have in the past been writers—and their descendants are not yet extinct—who interpreted the Saxon nomenclature in the case of such names as Coldharbour in a sense which carried with it the irrebuttable presumption that the Saxon invaders, on reaching a hill, a building, or an earthwork, called a halt, and sent for the Staff Antiquary. When he had duly examined the object and reported upon it in triplicate, stating whether or no it was Roman, and whether, if so, it had been used as an observation point for laying out roads, or as a temporary shelter for a party of soldiers, the Divisional Cartographer gave it the appropriate name, and the war was resumed.

Travelling in imagination with the invading Saxons I cannot help seeing the matter rather differently. I can see that they would naturally use the roads their predecessors had made; that if a hill suited one invader for a lookout post, it might suit another for the same purpose; that a party of Saxons might find a disused Roman shelter convenient; so that Saxon use and name might perpetuate Roman use, a possibility which the archaeologist ought not to overlook. But I feel strongly that the Saxons were not archaeologists; and that if they gave to a place a name signifying its purpose, the name is a pretty clear proof of the use to which they themselves put it, and of nothing else. I do not of course forget that when they saw a place which looked to them like a *burh* or a *ceaster*, they often so named it, irrespective of their own use. But these are topographical words, describing the character, and not the purpose of the object.

I believe therefore that they called their rampart the 'strong ditch', not because they thought that some forgotten race had so designed it, but because they themselves made it to mark the line over which no man might pass unless at his peril.

There is nothing in the known history of pre-Saxon Britain to account for its construction; a fact which of course is not conclusive. There is nothing to show that it was thrown up against the invading

† There is a suggestive collection of instances of the use of the word *faesten* in later Anglo-Saxon times in *Lees, Alfred the Great* (Putnam's, 1915; or in the *Heroes of the Nations* series), pp. 238 *seq.*, from which it appears that Alfred used it as the equivalent of the Latin *arx*; and that this was so far from being a merely literary translation that the expressions *faestengeworc* and *burhbot* seem to have been used indiscriminately to denote the duty of building forts.

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Saxons, and much to suggest that it was not. Lastly, the chronicles do not indicate any such resistance to the Danes in this district as a work of such magnitude would suggest. It will perhaps begin to be clear that I am claiming the Bucks Grimsditch as the work of the Saxon settlers of the present county; and I believe I have already done something to show that the claim is not unreasonable.

I propose now to deal with what we know of the history of the invasion, with such comments as will at least give the reasons why I have arrived at my conclusions.

The whole of the written history of the subject is contained in the paragraph in the *Anglo-Saxon Chronicle* under the year 571. It is so well-known that I am almost ashamed to quote it. However, let me repeat once more that in that year Cuthwulf fought against the Britons at Bedcanford, and took four towns, Lygeanburh, Aegelesburh, Baenesingtun, and Egonesham; and the same year he died. Cutha was Ceawlin's brother.

I do not think it is in the least necessary to read into the scribe's remarks any reference to a previous settlement, during the course of which the places mentioned got their names. The scribe gave them the names by which they were known to him. If he had used the native names, he would have had to explain them. And he probably did not know the native names.

Mr E. T. Leeds however holds¹⁴ that there was a previous settlement; or rather that the date given in the Chronicle is at least a hundred years too late; that the statement that Cuthwulf was brother of Ceawlin is an invention of the chronicler; and that the Cuthwulf of the invasion was another man of the same name. I cannot help thinking that it would be more logical to throw over the whole entry, name and all, as spurious.

Mr Leeds knows more about Anglo-Saxon archaeology than I know of any subject; and I hope he will not take it amiss if I try to show how his evidence appears to a layman. Because, if Mr Leeds is right, I am wrong.

First, let me say generally that in my opinion great caution is needed with the arguments *a silentio* of which the archaeologists make frequent use. In the centuries which have elapsed since the Saxons came, the plough, the spade, burrowing animals and the chemistry of nature, and official and unofficial searchers have had innumerable

¹⁴ The West Saxon Invasion and the Icknield Way. *History* (July 1925), x, 38, p. 97.

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opportunities of removing the relics of the past. It is probable also that in many cases continuous occupation has covered Celt or Saxon under the deposits of later times. Possibly pagan cemeteries lie beneath Christian churchyards.¹⁵ In any case no one suggests that the known pagan cemeteries contain the remains of the whole of the Saxon population.

So that while we must treat the archaeologist with respect when he speaks positively as to date and race, we may be permitted to postpone our submission if his assertion is merely that where there are no discoverable relics there were no settlers.

Mr Leeds, in the article already referred to, accepts the order in which Cuthwulf's conquests are given in the Chronicle as correctly indicating the line of march. He also agrees that the invaders were Saxons. He holds that Bedcanford is Bedford, a view which has now been generally abandoned.¹⁶ He believes that the dates of the archaeological finds in the district make it impossible that the settlement could have been the offshoot of a sixth century invasion starting from the Hampshire coast; and assumes therefore that Cuthwulf came down the Icknield Way from the Wash in the late fifth century, and had nothing at all to do with Wessex or Ceawlin.

Now let us glance at his evidence. Putting his case shortly, he relies on the similarity in date and design between the finds at Kempston and those at Frilford. Kempston again has affinities with the Sutton Courtenay finds; and all three seem to be akin to other finds in Cambridgeshire. He adduces also late fifth or early sixth century discoveries at Frilford and East Shefford.¹⁷ He dismisses the finds at Dorchester, which are generally regarded as exceptionally early, as a thing apart. It is tempting to do likewise; but I cannot feel that any theory is safe while these remain unexplained.

So far then we have, if we may accept the archaeologists' dates, evidence that in the late fifth or early sixth century Saxons had reached Kempston in Beds and Frilford in Berks.

What of the intervening area—the area which Cuthwulf is said to have conquered in 571? Let me quote Mr Leeds.¹⁸ 'The line

¹⁵ At Taplow the famous barrow, which is said to date from about 620 to 630, is in the old churchyard.

¹⁶ Place-Name Society, Beds and Hunts, p. 11.

¹⁷ *History*, l.c., p. 101. Oddly enough, on p. 103, he calls Frilford an early West-Saxon cemetery, which seems inconsistent with his main thesis.

¹⁸ *History*, l.c., p. 103.

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of Saxon settlements along the line of the Icknield Way in Cambridge-shire and Bedfordshire already mentioned is continued in Bucks and Oxon. In Bucks cemeteries have been found at Wing, Mentmore, Oving, and in a group southwest of Aylesbury, including Stone, Bishopstone, and Kingsey. These in turn lead to the Thames at Ewelme, Benson, and Dorchester. *Not all these cemeteries can be proved to be early, though certain finds, as at Leagrave, Beds, and at Bishopstone, Bucks, have been interpreted as such*. Translated into plain English, the words which I have italicised mean that none of these cemeteries can be proved to be early. The British Museum authorities¹⁹ give 550-650 for the Stone and Ewelme finds. Mr Leeds goes on to consider the evidence of cremation, but does not regard it as proving conclusively either date or race.

If then we accept the archaeologists' dating of the finds, it appears that they have proved late fifth or early sixth century settlements south of the Thames, west of Dorchester; and in the neighbourhood of Bedford; but nowhere between Kempston and Frilford. Thus Mr Leeds has to admit tacitly that the Bucks finds do not displace the Chronicle story, and the British Museum dates actually corroborate the Chronicle; and we are reduced to the conclusion that after the Saxons had occupied Kempston in 471 they went on to Aylesbury in 571, and finally reached Frilford in 471, possibly with the aid of Mr H. G. Wells' time machine.

But since Mr Leeds expressed the opinions to which I have referred, a cemetery has been excavated at Luton, which Mr William Austin assigns to the early sixth century.²⁰ In his introduction to the description of the finds, he identifies Lygeanburh as Luton, and suggests that there may have been a West-Saxon invasion about fifty years before the date given in the Chronicle. His use of the term West-Saxon presumably implies that he accepts the Chronicle story that Cuthwulf came from south of the Thames.

Many of the articles found, notably those adorned with garnets, definitely belong to the late sixth century; but one of the brooches illustrated certainly appears to resemble the early Kempston brooch, which is generally regarded as of a distinctly primitive type.

Luton is sufficiently near to Limbury to make it impossible to disregard this find. It is unfortunate that the account does not state

¹⁹ *Guide to Anglo-Saxon Antiquities*, pp. 35, 78.

²⁰ *Antiquaries Journal*, VIII, 176.

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whether the brooch was found alone or with other objects ; but this, I gather, is not the fault of the authors.

The fact of the discovery of this brooch led me to enquire a little more closely into the archaeologists' method of dating these early jewels ; and I am now, as a result, doubtful whether they have completely proved their case. They work, quite logically, by comparing the English finds with objects found abroad in circumstances which make it possible to date the deposit ; and by selecting from the objects found in England a succession of types, of which they take the most primitive as the most ancient. I do not quarrel with this method. I cannot suggest a better. But they have defined their periods so rigidly that the method has, as it seems to me, ceased to be their servant, and has become their master.

Let us look at the facts ; and for this purpose I am unrepentant enough to treat as facts the dates given by the Anglo-Saxon Chronicle.

The date of the invasion of Kent may be taken as about 450 ; of Sussex, as 477 ; and in both cases, the settlement of the newcomers was a long and laborious process.

Cerdic lands with a few ships in 495, and his followers in 501 and 514 ; the invasion of East Anglia is not dated.

The first interments in these areas could obviously not have taken place before the landing ; and the manufacture of ornaments must be later still.

Therefore, if objects are found in Kent which can definitely be dated as having been made before 450, they must have been brought from the Continent. In the sphere occupied by Cerdic and his successors, all objects of a date prior to 500 must be imported.

And even accepting Mr Leeds' statement that it was not the custom to bury heirlooms with the dead²¹—which in effect means, I take it, that the dead man took with him to the grave the ornaments he had worn in life—there might be an interval of as much as fifty years between the date of manufacture and the date of interment ; so that though an object is found in Cerdic's sphere, it may yet have been made as early as 450.

We should not, I think, expect to find in any district any English-made ornaments for some years after the first invasion. There must have been professional makers of these articles ; and it is hardly likely that the first long ships carried any unnecessary passengers.

²¹ *Archæology of the Anglo-Saxon Settlements*, p. 62.

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It is possible that from the first the adventurers brought their wives ; otherwise they would have taken native wives, and the women's language would have made inroads on the language of the conquerors. But there is, I suggest, no evidence that in the early days of the settlement any jewellery was made in England, or that if it was it kept pace in its development with the artistic progress of the Continent.

When manufacture began, craftsmen might be brought over ; or the craft might begin anew, in which case the old patterns would be copied, and for a time persist. Or Romano-British workmen might be employed. There are many possible sources of confusion in type.

It appears to me, even supposing that I have put these difficulties too high, that they are sufficient to throw very grave doubt upon any rule of thumb method of dating ; indeed, the method defeats itself ; because if we accept it, with the conclusions which Mr Leeds bases upon it, we are faced by the odd fact that, in Mid Bucks at least, after a certain time, say 535, the settlers ceased to bury their dead, and did not resume the practice until Christianity came a hundred years later. Alternatively, there were no Saxons in Bucks between, say, 535 and 635 ; and this will hardly do ; for Mr Leeds admits that Christianity spread over the district in the seventh century ; and this postulates that there was someone there to be converted.

Again, Mr Leeds' theory, involving as it does battles and widespread conquests, seems to me to imply that the Saxons were coming over in incredibly large numbers at that early date. How many families—nay, how many men—could a long ship carry ? This aspect of the question has to be considered in any review of the period. How did they live ? Did they bring plough-teams as well as jewellers ? Where are the bones of this mighty host ? Where are their shields, their swords, and their ornaments ? Where are the fields where these regiments fought and fell ? And how comes it that the conquest took so many weary years ?

The moderation of the Chronicle story is its own defence, and its probability is its corroboration. In Kent indeed it suggests an invasion in considerable numbers, resisted with determination. Cerdic, however, comes over with a few ships only. There is no saga-like glorification of his invincible prowess. There is no hint of any plan or scheme of conquest ; no attempt to unify the story. We hear only of isolated landings by a few pioneers. Then comes a long period of gradual growth in numbers, both by natural increase

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of population, and by repeated relays of newcomers ; circumstances which afford a motive for fresh conquests.

The conclusions of the Place-Name Society with regard to this region appear to be favourable to the Anglo-Saxon Chronicle.²² They do not identify Bedcanford ; they place Lygeanburh at Limbury ; they believe that the invasion of 571 covered south and central Bucks only ; and find, in support of this, Anglian place-names in the north of the county, West-Saxon in the centre and south ; and they find the forms of the latter characteristic of the sixth and seventh centuries.

In these circumstances, I do not hesitate to say that Mr Leeds has failed in his attempt to discredit the Chronicle story.

Let us now imagine ourselves with Cuthwulf, brother of Ceawlin, at Limbury in 571. How he came to Limbury is a problem which I must not shirk ; but will hold over in the hope of getting an insight into his objects and methods.

Cuthwulf was, I think, at the head, not of an expeditionary force, but of a not too unwieldy horde of families with their belongings, seeking land. Such a body must travel along a road, and the Icknield Way is the route by which individuals or armies going south from Limbury would naturally move. Whether Cuthwulf had any previous acquaintance with the country does not greatly matter ; it unrolls itself as you approach and pass through it along the hillside.

The Chronicle narrative suggests what might have been conjectured without it, namely that Cuthwulf set out with the deliberate intention of seeking the low-lying lands. In short, he was looking for a river.

At Limbury he had defeated the Britons, whom he had already encountered at Bedcanford. Probably neither force consisted of what might be called professional soldiers : and there would not be many hundreds—perhaps not many score—engaged. In the opinion of the Place-Name Society, Bedfordshire was not settled before Cuthwulf's invasion ;²³ and it may be suggested that his choice of a southerly route is some slight additional confirmation of the statement that he came from Wessex. Otherwise, he might have moved into the Ouse valley.

Having chosen his route, he comes, where Akeman Street and

²² Mawer, *Problems of Place-Name Study* ; Place-Name Society, Bucks, Introduction, p. xiii ; Beds and Hunts, Introduction.

²³ Beds and Hunts, p. xiv.

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the Icknield Way coincide, in sight of Aylesbury and of its fair and watered vale. Beyond Aylesbury is a river, now the Thames. Aylesbury is not in the hills, but an outlier ; and he takes it, and with it the district which it commands. Beyond the river are the hills where Waddesdon and the Winchendons now stand, with Crendon and Brill away further off. His folk settle thickly between the Icknield Way and the river, which in after years formed the north-western boundary of the Hundreds of Aylesbury and Stone. The villages which may represent the original settlements all lie, with one or two apparent exceptions, to which I will return, either between the Thames and the Icknield Way, or on the Way itself, and not beyond it.

Cuthwulf has cowed his opponents, and he wastes no time in hunting them out of their hill retreats ; there will be time enough for that, if he cannot find land in the vales. Land there is of the right sort ahead of him, and he presses on between the hills, and comes by Icknield down to Benson. Now when Domesday was compiled Benson had long been what we understand by a royal manor of ancient demesne stretching right down to the Thames between Fawley and modern Henley, and containing within it the road. The tendency was to decrease these royal domains by grants to subjects rather than to increase them ; and this natural process which we can see in operation in later times must have been in existence from the first. Therefore, I think, we may assume that Benson in the Chronicle means what the chronicler meant by Benson, that is to say, at least what Domesday meant by Benson, and possibly a larger area, an interpretation which I should also apply to Aylesbury and Eynsham. If so, the entry in the Chronicle as to Benson would imply that Cuthwulf when he took it secured also the whole of the Wallingford-Henley road, and the fords at each end of it ; a suggestion which affords material for interesting speculations.

Holding Benson, Cuthwulf may travel to Eynsham by either bank of Thames. By crossing the river, he would divide his forces ; and I suggest therefore that he probably chose the north bank.²⁴ Reaching Eynsham, he comes in sight of hilly country again ; and in

²⁴ Mr Leeds characteristically says (The West Saxon Invasion, *ut supra*, p. 105, footnote) :—' It is assumed that Swinford was captured from the Berkshire shore after the first crossing of the Thames had been effected lower down '. Rejecting his historical assumptions and accepting his archaeological evidence as to the early date of the finds at Frilford, Sutton Courtenay, Long Wittenham, and East Shefford, it would seem that in 571 the Berkshire shore had long been occupied.

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any case, his people must now get to the plough-tail. A horde of families cannot live on the country indefinitely. In fact, it is a little difficult to understand how they lived at all, unless they began their march when the barns of the invaded were still full. But the same need summons the Briton to lay aside his sword and sow such lands as are left him. It is not likely that either party can send elsewhere for supplies. So nature calls a truce.

This view is implied in the Chronicle, which suggests that the campaign was begun and finished in a year.

The situation then becomes ripe for a political settlement. If the districts indicated in the Chronicle were indeed the first settled homes of the Cilternsaetna, it appears that they lay within an area of which the outer limit ran outside but roughly parallel with certain vital roads.

Check this statement by the map, and it will be obvious that Grimsditch is exactly fitted to be the eastern boundary line of the territory settled in the operations attributed to Cuthwulf by the Chronicle.* It is almost certainly a Saxon work; and we know of no other period of pre-Conquest history which so aptly accounts for its construction.

It is the case that the land through which run road and rampart is almost all, even so late as Domesday, identifiable as what we know as *Terra Regis*. In the first days we may call it, anachronistically, War Department land. Perhaps its tenants furnished patrols.

In speaking of *Terra Regis*, I am allowing myself to include lands which appear in Domesday as church lands, which, it is reasonable to assume, may have been retained in the royal hand until they were so given; to conjecture that Aylesbury was once a royal possession of greater extent than it was in 1086—a conjecture founded on its Domesday hidage; to allow for some grants out of Benson, for which there is evidence; and to assume that Harold's Risborough was granted him by the king. My proofs are not complete and watertight; but I think they are sufficient to justify consideration. It is not inapposite to observe that other hilly districts, such as Brill, were also King's Land. Formerly they sheltered enemies; later, they furnished hunting of another kind. I may further recall the fact that the Place-Name Society think that there are indications that the native

* Where there is a pass through the hills, Grimsditch juts out into a salient to cover it.

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lingered at Brill and on the Chiltern plateau after he had been driven from the vale.²⁵

Thus the home of the people is in the valley among the arable land; the hills are held just so far as they are needed to keep control of the roads and fords, and no further.

The lay-out of some of the Bucks Hundreds seems to me to afford some confirmation of the view that Cuthwulf's entry was made by the Icknield Way, and that Grimsditch was a boundary between his followers and their enemies in the hills. To give in detail my proofs of the propositions which I am about to make would lengthen this paper unreasonably; and for the moment I must ask acceptance for my assertions.

If Cuthwulf's expedition is historical, Aylesbury is the nucleus round which Bucks grew up, and the three Hundreds of Aylesbury, Stone, and Risborough represent the original settlement.²⁶ But, presumably before the shires and hundreds were marked out, the district centred on Aylesbury had thrown out little colonies into the land beyond Grimsditch. It is clear from its feudal history that The Lee, which is outside Grimsditch, was part of Weston Turville,²⁷ and must be sought in that vill in Domesday, though Wendover lies between them. Great Missenden falls into Aylesbury Hundred—or sometimes into Stone. This was probably a colony from Marsworth²⁸ in Yardley (Erlai) Hundred, across the Tring peninsula. It travelled perhaps by way of that peninsula, founding Miswell²⁹ in Tring, *en route*. Having arrived, it falls into association with Aylesbury, because there are at the time no settlements east or south of it. The Hampdens³⁰—so named, I suggest, from the curved dene under a spur of

²⁵ Place-Name Society, Bucks, p. xiv, p. xii note.

²⁶ Maps of Bucks showing the Domesday Hundreds may be found in Place-Name Society, Bucks; in V.C.H. Bucks, vol. 1; or in Fowler, 'Pipe Rolls of Richard 1 for Bucks and Beds', *Beds Hist. Rec. Soc.*, 1923, vol. vii.

²⁷ Harl. ms. 3688, f. xlviib (58).

²⁸ Place-Name Society, Bucks, p. 153.

²⁹ V.C.H. Herts, 1, 318b, 324b.

³⁰ The V.C.H. editors are mistaken in identifying the Domesday Book Ha'dena as Great and Little Hampden. The two Hampdens are feudally independent with quite separate histories. I have no doubt that the D.B. Wandene is Little Hampden, w having been substituted for it by association with Wendover, which name follows in the text. It afterwards appears as a chapelry of Hartwell. Added to Ellesborough it makes up the latter's 30 hides.

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the Chilterns in which they lie³¹—are extensions into the area beyond Grimsditch of the territory behind it; and so they too fall into Aylesbury Hundred.

These indications, trifling though they are, may, I think, be the visible evidence of the expansion in very early times of the original settlement; the pact represented by Grimsditch is at an end; the natives are no longer to be feared. For it is not the *Terra Regis* which extends itself. Beyond Grimsditch, the new holdings exhibit the character of tentative encroachments by individuals, rather than of an ordered and general annexation by a people under its leader.

A similar phenomenon is observable in South Bucks. The Place-Name Society suggests³² that this area was mainly settled from the south or southeast, possibly before the settlement of the Vale of Aylesbury: and puts forward in support of this theory evidence which tends to show a movement spreading from Harlington in Middlesex to Hitcham, Hedgerley, and Hughenden. And, as The Lee was thrown off from Weston Turville, so in South Bucks we find Penn to be a detached part of Taplow, with another vill intervening, while Beaconsfield is similarly part of Burnham. The churches of Penn and Beaconsfield begin life as chapels of Taplow and Burnham. The parent must be nearer the base than the child; and the inference as to the direction from which the movement originated is difficult to resist.

The encroachments inwards from both sides suggest a prior permanent settlement with limits believed to be fixed. The permanence is of course only in the mind of the man of the period. He provides for eternity, and his eternity lasts ten years or twenty or fifty. He is really dealing with present needs and not with the future at all. Grimsditch must have become unnecessary in a very few years.

And this consideration brings me back to the question of the course which Grimsditch followed from West Wycombe. At that point we have the first arm of a salient, and I feel little doubt that the rampart was intended to return inwards and then strike more or less directly for some point on the Thames, covering the ford at Henley. Possibly it was never completed; for, apart from some place-names

³¹ Professor Mawer will not have this; but cf. Place-Name Society, Bucks, p. 177 (Hambleden); Worcs, p. 44 (Hamcastle). At the same time I should be better satisfied if Professor Mawer agreed.

³² Bucks, pp. xiv, xv.

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which may or may not refer to it, no trace of it can now be found ; or at least, nothing which will satisfy the demands of the Editor.

With regard to the South Oxfordshire Grimsditch, I think there is something to be said for the view that this too is part of Cuthwulf's plan for securing the road and the fords over the Thames ; if not, the reason may simply be that he had nothing to fear from the south of the road. But if by Benson the Chronicle does mean what Domesday meant by Benson, the South Oxon dyke would stand to it in precisely the same relation geographically as that occupied by the Bucks Grimsditch in regard to the other conquered territory.

And now we must turn to the difficult and dangerous problem of Cuthwulf's approach to Limbury.

His expedition was quite clearly a result of the events set down in the Chronicle under the year 568. Professor Mawer has declared for this connected view of the entries in the Chronicle in his *Problems of Place-Name Study*. In 568 Ceawlin and Cuthwulf had fought against Ethelbert, king of Kent—a boy at the time—and driven him into Kent, and killed two ealdormen at Wibbandune ; it is not stated that they were Kentish ealdormen ; nor is Wibbandune given by the Chronicle as the site of the battle or battles against Kent. Professor Mawer says that Wibbandune is not Wimbledon ;* but I do not think he has identified the place. It does not greatly matter ; the sequence of events indicates that it cannot have been far from Kentish territory ; it may be that Ceawlin, checked in his advance westward, was seeking an outlet for his surplus people by moving east—or possibly some contest may have arisen as to the control of the territory between Ceawlin's sphere of influence and that of Ethelbert.

Whatever the cause of the movement, the event finds Ceawlin, in 568, south of the Thames, travelling towards Kent. What possible reason was there why the victorious West-Saxon should not at his leisure explore the banks of the Thames to find a crossing ?

I think it is quite clear from the ingenuous narrative of the Chronicle—ingenuous, because it is not used to support any special political doctrine—that in spite of the success at Old Sarum in 552 Ceawlin had not made much progress subsequently ; that for some reason he found it necessary to move eastward in 568 ; and that it was not until nine years later that he was able to make good his western

* *History* (April 1926), XI, 41, p. 83.

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advance by his victory at Deorham. From 552 to 577 no progress to report ; and the only intervening event with any possible relevance Cuthwulf's conquest in 571.

Is it not possible to hold that Cuthwulf's success made Ceawlin's advance practicable, without attributing to either the foresight to see that it would do so ?

Cuthwulf therefore must have begun his march by crossing the Thames. I have carefully considered such routes as appear to be possible ; I have felt certain first of this route, then of that ; and now I am disposed to wait until Wibbandune and Bedcanford have been identified.

I am aware that Mr Leeds thinks that the south bank of the Thames was so thickly wooded as to be inaccessible at this period. Yet the river was accessible in the Bronze Age ; and the finds at Taplow, dated by the British Museum authorities as from 600 to 620^{ad} seem to show that the same was true at that time ; and though these facts do not actually disprove Mr Leeds' theory, they make it reasonable to ask him for proof.

If Cuthwulf crossed as I have suggested, it is not too extravagant to suppose that he may have had in mind from the first the possibility of working back to the Thames. He may very well have had some idea of the lie of the hills, and the hazards involved in passing over them, from observations taken from the south bank of the river ; or indeed from information from many possible sources. If I am asked why he should cross the lower Thames instead of the narrower stream higher up, I can only suggest that he had with him a substantial number of people whom it was inconvenient to take back to the upper reaches. Further, I do not know that he had command of the upper reaches.

The Gewissae themselves were presumably a conglomeration of different races or clans : and it is, I think, not unreasonable to suppose that Cuthwulf's following consisted of families of mixed races, gathered from the debatable land lying between Wessex and Kent, as well as from Wessex itself ; for it is to be noted that when they settle they have no race or tribal name, but are known as Cilternsactna, from the district in which they dwell ; just as happened in later years when Angles and Saxons settled in Hwiccia.

If there is anyone who thinks the question of the settlement of

²² *Guide to Anglo-Saxon Antiquities*, p. 64.

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Bucks and South Oxon worth pursuing, I would call his attention to the fact that there is a line of villages on the Icknield Way itself ; as also upon Akeman Street ; and that in the great horseshoe bend of the Thames between Wallingford and Henley, with the exception of two or three villages situated by fords or bridges, all those outside Grimsditch are up in the hills, and every one of them has a river frontage, as though the expansion had begun by a cautious movement just across Grimsditch, and spread rapidly down to the river. Can the hill-villages mean that, for some reason, the Saxon, having driven out his predecessor, settled on the site where the latter had dwelt, instead of following the supposed traditional practice, and making his home by the river ? Mr Leeds himself says²⁴ that though we know some of the pagan cemeteries we do not know their settlements. The cemeteries, as he shows, are often by running water. There may have been a reason for this which did not apply to the settlements. If these lie beneath the present villages, this might account for their disappearance. A reason for occupying the sites where the native had dwelt would be to save the time needed for breaking up fresh land ; and if this view could be established, it might be a confirmation of the lateness of the settlement. It may be noted that the Place-Name Society think that the name of Walton by Aylesbury indicates that the Saxon there retained the native to work for him.²⁵

In conclusion, I have to express my fervent gratitude to the Editor, who has not only taken the personal interest in the subject which has resulted in the articles on Grimsditch in *ANTIQUITY* for September 1930 and June 1931, but has, by his criticism of my original paper, guided me into setting out my views in an intelligible form, and has persuaded me to refrain from making a number of statements which I should have had difficulty in supporting by satisfactory arguments.

There still remains a certain amount to be done in the matter of searching for references to the Dyke in charters and other documents dealing with the land ; and much to be done in the field, not least in connexion with the history of the roads ; and it daily becomes clearer that neither the field-worker nor the record-searcher can safely arrive at conclusions without knowing something of what has been done by the other.

²⁴ *Archaeology of the Anglo-Saxon Settlements*, p. 16.

²⁵ Place-Name Society, Bucks, p. xix.

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APPENDIX

Since this paper was written, I have, at the Editor's suggestion, minutely examined Nils Aberg's conscientious, candid, and convincing work *The Anglo-Saxons in England*,³⁶ which is an attempt to present a summary of the results of all the recorded researches in the field of Anglo-Saxon archaeology, with a view to establish new points of departure for estimating the chronology of the period of migrations with the help of Anglo-Saxon material.³⁷

As a result, I am confirmed in my suspicion that Mr Leeds has done less than justice to his archaeological facts in his attempts to fit them into his historical theories.

Mr Leeds' work, as is natural, is mentioned on every page of the book, and the author recognizes him as a master in this field. Aberg nowhere records any disagreement with him or with Mr Reginald Smith, and I do not believe that any substantial differences exist; except that Aberg founds no historical theories upon his conclusions, and therefore expresses them less positively.

To obtain his dates, Aberg combines chronology—the evidence of datable finds and of historical events—with typological analysis, or a careful examination of styles, shading off from the primitive to the advanced. Using this method, and working backwards, he finds it easy to survey the Kentish work of the seventh century (pp. 149–55), and to travel back to about 575 with some degree of certainty. Earlier than this, he says, the contours of the line of development become increasingly vague (p. 155). That is to say, when chronology fails, and type is the only test, dating becomes difficult and doubtful. The method is, of course, that employed by other archaeologists; and their doubts and difficulties are the same.

With regard to the culture characteristic of the area which he describes as North of the Thames—by which he means non-Kentish—he fixes points of contact with Kent for the last quarter of the sixth century (p. 156); and working upon what he finds there, he traces the development of types steadily backwards from the more to the less advanced; and then spreads out the series to cover the period between the time of the invasion and the end of the sixth century (p. 156). But—and this is important—I am inclined to think that

³⁶ Uppsala 1926; and Cambridge. Reviewed in *ANTIQUITY*, September 1928, 361–3.

³⁷ *Op. cit.* Foreword.

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here at least, although he does not say so, he is working upon a conception of a general invasion of the whole of England in about 450. I doubt if the most fervid critic of the Anglo-Saxon Chronicle would support this. This means that in some cases he has allowed for development in England a much longer period than was in fact available; and his conclusions as to the bearing of style upon date must therefore be reconsidered.

With this reservation, we can accept his conclusions as to the succession of styles. He safeguards his dating of the early types by saying 'Chronological determination rests chiefly on typological analysis, and is supported neither by coin finds nor by points of connection with known historical events apart from the invasion' (p. 156).

It is obvious that much depends upon the dates at which the invaders landed. I have already hinted at this; and it is therefore of importance to observe that in Aberg's opinion archaeology confirms the date of the earliest considerable invasion as given by Bede and Prosper of Aquitaine, namely 440-450 (p. 1); that it confirms also Bede's statement that Kent, the Isle of Wight, and part of Hants were occupied by a race distinct from the other invaders of Britain, whether they are to be called Jutes or not (p. 2); and that the invaders of Sussex were Saxon (p. 2).

He further states positively that in the fifth century there is no discernible difference in type between the ornaments of Kent and those of the rest of England (p. 2); though later on there are notable divergences, with which he deals in detail (pp. 3-9).

If this be so, it follows that, even if Mr Leeds' date for the occupation of Kempston and Sutton Courtenay be correct, the resemblances between the finds at the two places would not prove that the same stream of invaders deposited both.

I propose to summarize briefly what Aberg has to say with regard to those classes of objects which he refers wholly or in part to the fifth century.

He finds that the earlier cruciform brooches are common to Kent and the rest of England; while the later cruciform brooch does not appear in Kent at all (p. 4). On typological grounds he dates the Kentish specimens as belonging to the period 450-510 (p. 30), when development ceases in Kent. He believes that, on the whole, the Kentish cruciform brooches develop in the same way as the corresponding types on the continent, and go out of use at about the same

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time as they do (p. 31). He concludes that Kent stood in closer relation with the continent than the rest of England (p. 31).

In non-Kentish areas, he finds that, instead of ceasing, the development continues—the use of this word indicates that he is treating 450 as the commencing date in non-Kentish, as well as in Kentish areas—steadily over perhaps another hundred years (pp. 32, and 156), and classifies five type-groups, of which the earliest only need concern us. His evidence for the dates of the earliest group is, he says, typological only, and no assistance is to be obtained from other objects found in the graves with the brooches (p. 35). Precedent to this earliest group of cruciform brooches comes, he says, the Dorchester brooch, the type of which dates it as having been made about 400, although, as he points out, it may have been deposited much later (p. 13). A brooch found in Suffolk, which bears considerable resemblance to the Dorchester specimen, is the next earliest, and with others from East Anglia and one from East Shefford, Berks, is placed by him as belonging to a period ranging from about 440 to 500 (p. 36). His second group is placed, by an analysis of its types, between 500 and 550 (p. 38); and the remainder, overlapping but gradually moving forward, by degrees acquire characteristics which enable them to be assigned definitely to the latter part of the sixth century (pp. 41, 50, 51).

The other great class of brooches, known as saucer brooches, falls into two subdivisions, cast and applied, of which the second admittedly flourished during the latter half of the sixth century (pp. 22, 25). The evidence for this is both chronological and typological.

The cast brooches are regarded as earlier. They have been found in Hanover, which fact is apparently accepted as evidence that they were a product of the continental art of the early fifth century (p. 16). [It appears from *Brit. Mus. Guide to Anglo-Saxon Antiquities*, p. 37, that the evidence as to the Hanover finds is simply that they are pre-migration in date.] They are found in Kent; at Mitcham and Beddington in Surrey; in Sussex; at Droxford, Hants; at Long Wittenham, East Shefford, and Frilford, Berks; in Oxfordshire; at Kempston, Beds; in Cambridgeshire, Hunts, Northants, and Warwickshire (p. 18).

With regard to date, Aberg says that the chronological position of the earliest of these brooches, namely those with spiral ornament, is somewhat uncertain. No enclosed finds from the fifth century have yet been made (pp. 18, 159), and the assumption that some of

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them date from the fifth century is based on their resemblance to the Hanover finds ; while the fact that they persisted at least to the middle of the sixth century is rendered probable by their presence in late burial grounds such as Fairford (pp. 18, 19).

This analysis of the development of these two classes of brooch supports rather than undermines the dates given by the Chronicle for the successive invasions. The earliest Kentish brooches were of course brought over by the invaders ; and Aberg would as it seems agree that their sons may have obtained their supplies from the continent during the strenuous years of the conquest. So soon as the settlement was complete, the arts and crafts would begin to be practised ; but by that time we are approaching the date allotted by the Chronicle for Cerdic's invasion. Naturally the new invaders, and those who followed, from 495 to 526, brought with them ornaments of the type current on the continent, and therefore also in Kent. In turn they too would begin to manufacture for their own needs, and then, and not till then, the streams of culture in Kent and in the rest of England would tend to diverge.

We have now exhausted the types to which a fifth-century date has been assigned, with the important exception of the rosette-shaped attachment plates and strap-ends (pp. 12, 13) found at Dorchester, Oxon, Long Wittenham, Berks, and in Kent, Surrey, and Sussex ; and the four famous equal-armed relief-brooches. These have been regarded as among the earliest Saxon antiquities in England.

Rosettes and strap-ends of the types referred to have not yet, says Aberg, been found together with such other objects as render possible a definite chronological determination. He suggests, however, that it is probable that some of the finds can be assigned to the time before the middle of the fifth century (p. 13). His reason apparently is that their style presents certain resemblances to that of the equal-armed relief-brooches (p. 13, note 2), to which we will therefore pass.

This type of brooch has been found at Sutton Courtenay, Berks, at Kempston, Beds, and twice in Cambridgeshire ; but not in Kent. Aberg expresses considerable doubt as to their date (p. 14) ; he thinks they cannot be placed at earliest before the middle of the fifth century ; but he notes that they show signs of the influence of provincial Roman art, and, like other antiquities found in England, have no counterparts in the old homes of the Anglo-Saxons on the continent (p. 15). He goes so far as to hazard the suggestion that they may represent a survival of the classical tradition in England as continued by Celts,

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and not brought in by Teutons (p. 16). It is thus quite possible that this type of brooch has no bearing on the date of the invasion at all. This leaves the primitive Kempston brooch, which is usually assigned to a very early date on the assumption that it is the prototype of the equal-armed relief-brooch (pp. 13, 14), in the air, with the edifices which have been built upon it.

Archaeology thus affords no positive evidence whatever for rejecting all or any of the dates given by the Chronicle. It may engender doubts, but that is not quite the same thing. If we allow that the Dorchester finds are early, there is no reason why they may not represent the result of a Kentish expedition up the Thames valley, initiated soon after the conquest of Kent, and consisting of a force large enough to hold its own, and to form settlements at Frilford and East Shefford. In the light of Aberg's opinion, it is impossible to assert that these burial places are Saxon and not Kentish. This would bring Mitcham and Frilford into line; and would afford a possible explanation for Cæawlin's quarrel with Kent.

Thanks are due to the Librarian of Corpus Christi College, Cambridge, for kindly arranging a photograph to be taken of the 'Anglo-Saxon Chronicle', from which the plate facing p. 291 has been reproduced.—EDITOR.

The Palace of Minos*

by PERCY GARDNER

Emeritus Professor of Classical Archaeology in the University of Oxford

WHEN I acceded to the suggestion of the Editor of *ANTIQUITY* that I should write a review of the third volume of Sir Arthur Evans' great work on the palace at Cnossus I was aware of the difficulty of the task I was undertaking. It would of course be quite impossible in a brief article to give any notion of the vast operations which the author has carried through with infinite skill and patience, revealing to us the character of a most curious civilization in Crete, the very existence of which was not suspected until the excavations of Schliemann at Mycenae gave us data. In 1877 I was so much interested by these revelations of the spade that I went to Greece to investigate them, and at Athens Sir Charles Newton and I were shown all the treasures of Mycenae. Newton's article on them in the *Edinburgh Review*,¹ and mine in the *Quarterly Review*,² introduced them to English archaeologists, greatly to Schliemann's satisfaction, as he was openly accused at that centre of scandal, Athens, of having had the rich treasures made by local goldsmiths. And Stephani, perhaps the most learned archaeologist living, was claiming them as the buried spoil of the barbarian invaders of the Roman Empire.

Look on this picture and on that! By slow degrees Evans has succeeded in recovering in a great measure the architecture, the art, the manners and customs, the physical type, the religion, of the great civilization of which that revealed at Mycenae was but a late offshoot, a civilization contemporary with the mighty empires of the East, and in some ways more interesting than any of them, since it is more European, more in the line of our civilization and progress.

Schliemann was drawn to his work of excavation by a keen but somewhat naive enthusiasm for the Homeric poems. Of Sir Arthur Evans it may fairly be said that the experiences of his whole life had

* *The Palace of Minos at Knossos*, by Sir Arthur Evans. Volume III, 1930. Macmillan & Co. £5 5s.

¹ January 1878.

² January 1878, pp. 62-93.

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fitted him in an eminent degree for the work which awaited him. A son of one of the greatest of antiquaries and collectors, Sir John Evans, he has been familiar from childhood with every kind of monument of the past, and acquired, as a second nature, the eye of the archaeologist and the sense of artistic style which comes of life-long practice. His experience as Keeper of the Ashmolean Museum has rendered his immense knowledge systematic. His early work on the coins of ancient Italy and Sicily, which placed him in the first rank of numismatists, has developed his sense of beauty and his power of co-ordinating the facts of archaeological history with political events and the course of civilization. As son-in-law of the great historian Freeman, whose history of Sicily he supplemented, he has learned breadth, and to trace historic sequences. And it has been his good fortune to inherit wealth which has enabled him to work without dependence on endowments and institutions, to make most costly restorations, and to secure the services of many helpers, architects, artists and organizers, in his prolonged excavations. His equipment is indeed unique.

It was Schliemann who, in a flash of insight, discerned that Crete was the district where the earlier history of Mycenaean art was to be discovered. But there he stopped. Sir Arthur Evans started like a sleuth-hound on the trail, following on with steady perseverance. Having tracked certain antiquities to their source, he purchased a site near Cnossus; and his faith has been rewarded by the gradual unfolding there year by year since 1900 of a vast structure, which constantly grew in interest and importance. Dr Mackenzie on the spot offered valuable aid. And meantime at other sites in the island American, French, German, Italian and Greek explorers supplemented the excavations at Cnossus. The site has now been made over to the British School at Athens, in whose valuable Annual, year by year, the course of discovery had received a preliminary record.

No one could attempt to criticize the notable reconstructions of the palace at Cnossus who was not a master in architecture, and acquainted with all the local conditions. The latest reconstructions would not have been possible but for the use of a new material, ferro-concrete. And every kind of means, geologic, chemical, optical, has been used. Dwelling among the ruins Sir Arthur has lived over again the life of the Minoans, partaken of their sports, mingled with the crowd in their halls, observed how the light falls in particular hours of the day, what artistic effects the people most

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affected in their interiors. Yet while thus indulging the historic imagination, he never leaves the ground of fact, extorting from every scrap of stone or metal all the information possible.

To call the palace at Cnossus the palace of Minos is quite legitimate. It does not of course mean that a historic king Minos built the palace and thence ruled over wide domains. In fact several layers or periods may be discerned in the palace itself. The terms Minos and Minoan stand for a civilization highly developed and continuous from the neolithic age, of which abundant remains were found, until the advent of the semi-barbarous Achaeans and Dorians of the north, who for a time ruined it, though no doubt they brought with them the seeds of a higher and more lasting order. Possibly hereafter, if some future Champollion succeeds in reading the very numerous inscribed tablets of terra-cotta, we may know much more of the actual history of the age. Meantime we have to be content with semi-historic and archaeological prehistory, the dates of which are fixed mainly by the annals of Egypt.

In his first volume, Evans dealt with the history of the palace in the early Minoan age. In the second volume he dealt with other houses in the neighbourhood and with the geographical relations of Cnossus to lands of the south and east. The third volume is devoted to the Palace itself in the Middle Minoan Age. But as it is especially in this age, the culminating point of the whole civilization, that the artistic remains are most striking, the author devotes much of the volume to following out the indications furnished by these remains as to the ethnography, the customs, the sports and the religion of the Minoan people.

It is with these developments of civilization that I propose mainly to deal. I am no architect. Nor could even an architect venture to criticize Evans' wonderfully bold restorations save on the spot. But the contributions he has made to the history of painting, the history of manners, and the history of religion must always retain their value and importance. And of them I may venture to speak with diffidence, though the ground is extremely slippery, and especially analogies from parallel developments in the Greece of history must be used with extreme caution.

Nothing in the volume before us is more complete and masterly than the illustrations. In books produced in England these are usually a weak point. The publishers are apt to regard illustration

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as a luxury, and the cheapness of photographic work, with its superficial exactness, places it in high favour with them. But Evans fully realizes that it is necessary to place before readers representations which lay exact emphasis on the points which he is discussing. He has been able to secure the help of several highly skilled artists, among whom the two Gilliérons, father and son, are conspicuous. They bring out, eliminating the surroundings, what is necessary to the purpose. They are most accurate in point of style, and do not omit the smallest detail which has, or may have, any importance. They restore, with a wonderful combination of boldness and restraint, small fragments of painting, of relief or of figures. Such is their mastery of the whole field, that they can venture to transpose designs from one technique to another. For example, at p. 157 we have the design of the intaglio which Evans calls the Ring of Nestor, because it was found at Nestor's city of Pylos, translated into coloured fresco. It is a wonderful example of what may be called fine scholarship in art. The architectural drawings also, the work of a whole group of assistants, Mr Piet de Jong, Mr C. Doll, Mr Theodore Fyfe and others are so exact and so numerous that nothing is neglected and everything is made clear.

Nothing impresses the student of the frescoes, the intaglios, and the figurines of Cnossus more strongly than the devotion of the people to athletic sports, and sports of a very unusual kind. In Egyptian wall-paintings we find a vast number of representations of dancing, wrestling, and boxing. Such are abundant also at Cnossus. But they are quite over-shadowed by a kind of sport otherwise almost unknown in antiquity, scenes of bull-baiting and bull-taming. We are told that the youths of Thessaly in classical times practised the art of overthrowing bulls by seizing their horns, and this sport is represented on an interesting relief in the Ashmolean Museum. The cowboys of the western states of America practise a very similar sport. It has no relation to the Spanish bull-fight.

It seems from the Cnossian paintings that no people carried their love of bull-throwing so far as did the Cretans. With it they combined the art of making somersaults over the backs of charging bulls. And the remarkable thing is that these somersaults were practised by women as well as by men. But even more interesting than the performers are the groups of spectators on the frescoes, both men and women. The dress of men was extremely simple, consisting of little more than a loin-cloth. That of women was far more elaborate ; and no contrast

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could be greater than that offered by their long curls, their wasp waists, their ample skirts with flounces, to the very simple chiton and over-dress of the Greek women of historic times. They are seated in groups, evidently engaged rather in talking scandal one to another than in watching the sports. These ladies in their dress and their animated gestures are quite a new feature in ancient art, and have a curiously modern and modish look, justifying the exclamation of M. Homolle—' Mais ce sont des Parisiennes '. In the frontispiece we see two of these ladies seated in animated talk in the Queen's Megaron, which is restored, so far as is possible, with all its original brilliant decoration. When we turn to this wonderful picture from Egyptian and Mesopotamian scenes of worship and court ceremonies, we feel that we are in a different world, and a world much more like that which we see around us. Even the Greeks, our great teachers in all matters of art, may seem to belong to a more conventional world than these women in their luxurious naturalism.

One thing which at once strikes us in all Minoan scenes is the hard and tight waist-belt worn alike by men and women. It is so rigid that it might well be of metal : but is doubtless of hard leather. Doubts have been expressed whether the human frame could endure such tight girding. No doubt it is conventionally exaggerated, as is the musculature of the athletes. In the art of all peoples we find a tendency to exaggerate what are considered points of beauty ; Indian art emphasizes breadth of hips in women, Greek art slimness in women, especially in Amazons ; Italian painting fairness of hair, and so forth. In our own plates of fashion stress is laid on the points, however absurd and unnatural, which happen at the moment to be in fashion. But the general impression which we get in Minoan art is of young men sinewy and tightly girt, and of women also well-girt but exuberant as regards the breast.

It is clear that Evans is especially interested in the representations of religious cult and of the deities. He is quite right. Religion does not dominate Minoan art as it does that of Egypt and Babylon, but it underlies it in a high degree. The royal halls of the palace contain usually some indications of worship. The sacred symbols, the double axe, probably standing for lightning, and the ' horns of consecration ', very possibly an extremely conventionalized copy of an ' adorant ' with raised arms, abound everywhere. Even the bull-sports may have been, like the Olympian games in Greece, of a religious character. Direct representations of deities or of cultus are rare at Mycenae,

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and until lately also at Cnossus. But they are multiplying. There are sufficient proofs that the chief deity was female, a mother-goddess with whom was associated a youthful deity, her son, who appears to have, on occasion, died and been reborn. The local traditions of Crete fit in with this view; and parallels to it are found in places where we should specially look for them, in Phrygia, Syria and Anatolia generally.

At first sight it may shock one to find that the religion of the Divine Mother and her dying Son, which is still the basis of belief among eastern Christians, should go back to pagan and prehistoric times. But the shock need not be serious. The value of a religion lies not in its outward form and archaeological origin, but in its power over heart and life. And a new religion, however revolutionary, will have a tendency to adopt some of the features of that which it supersedes. The religions of historic Greece, of Judaea and of primitive Christianity were highly organized and aggressive, but there filtered into them, least perhaps into the Jewish religion, a good deal of the deep-seated religious feelings and customs of the surrounding nations. In all of them a supreme male deity was the highest object of worship. Evans speaks of the religion of the Cretans as matriarchal. This is a term which is often misunderstood; but the difference in emphasis between male and female deities in the Cretan religion and that of the Achaeans and Dorians is very notable.

There is one little monument, small in size, but of special interest and invaluable for suggestion, on which the author especially dwells. This is the gold 'Ring of Nestor', found in Messenia, in the intaglios of which he finds embodied the Minoan beliefs as to the under-world, or the world beyond the grave. According to him they represent the separation of a young pair of lovers and their meeting again in a future life through the kind providence of the Mother-goddess. It is always dangerous to draw inferences from a single example; and an explorer is always specially in danger when he attempts to do so; but certainly the ring is an exceptionally interesting and intriguing example. The Great Mother appears in a much less attractive form as a snake-goddess with serpents winding about her arms, who dominates shrines arranged in her honour in various parts of the palace, amid votaries and dedicated offerings.

For the history of art, the Minoan frescoes, reliefs and gems offer a remarkably rich harvest. The style is quite unique; one can never mistake a Minoan work for one of any other nation; and some arts

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such as the inlaying of the blades of daggers with metals of various hues, which Evans calls ' painting in metals ', is not found in so full development elsewhere. Here undoubtedly the nearest parallel is in the Homeric descriptions of arms and ornament, notably the description of the shield of Achilles. Whether Homer is describing actual works of art passed down to his contemporaries by the earlier inhabitants, or whether he is working out mere hints, offers a notable field for controversy. At Cnossus the fresco style, the miniature style, the intaglio style, all reach very characteristic results and all offer many conventions and symbols which prove a long and continuous course of development.

We are promised a fourth volume which will return to the inscribed tablets of terra-cotta, still awaiting interpretation, and furnish us with a complete index. It has been the lot of very few men to discover by excavation a new and highly developed phase of civilization in the past; and it may be confidently said that none of the few has ever worked out his results with more patience, knowledge, acumen, and historic imagination.

The Word 'Palstave'

by T. D. KENDRICK

I SUPPOSE we are all agreed that 'celt' is not a particularly brilliant name for a stone or bronze axe, even though we continue to use it. It survives, of course, not on its merits, but because we really do need a word other than 'axe' to denote these narrow-edged prehistoric tools, and 'celt' is at present the only substitute we have. We might, I mean, abolish the name celt if only celts looked a little more like axes; but we cannot, because there are many people in this world who do not like an axe to be called an axe unless it is the sort of axe they are accustomed to; whereas if you call a not easily recognizable axe a 'celt' and make rather a fuss about explaining that you mean by this a prehistoric axe, then these same people will probably thank you very much indeed and say that it is all most interesting. In other words we keep on talking and writing about celts because the public like the word; it is, after all, short and sweet, easy to remember, and devastatingly incomprehensible to the uninitiated. I feel that it is necessary for us to put up with 'celt', and I am only remarking here that we know it is a base word of miserable, mistaken coinage. I ask simply that we do not pretend to ourselves that it is a good word on the grounds that it is old-established and familiar; it was a bad word in the beginning and it always will be a bad word, despite its now considerable antiquity and frequent use. Lots and lots of blacks do not make a white, not even if the oldest black is 18th century black.

In addition to this name 'celt' which we apply to most of our stone and bronze axes, we also have the group-name 'palstave' to distinguish the members of a particular species of the celt genus. It is a very useful word and I do not think we could do without it, for though we can talk about 'flat celts', 'flanged celts', and 'winged celts', no one has yet succeeded in substituting a snappy descriptive name like these for the palstave-variety of celt. I should not dream, therefore, of suggesting that we get rid of 'palstave' and, indeed, I have myself a considerable affection for this curious word; but as so few of us know what it means or why it is the name of the prehistoric implements concerned, something may profitably be said about its



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BRITISH MUSEUM									
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BRONZE PALSTAVES FROM DENMARK (CENTRE) AND ENGLAND (LEFT AND RIGHT)



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history. That the word happens to come rather badly out of the enquiry is not, of course, my fault.

'Palstave' is the Old Norse *pálstafr* which means either 'pole-staff' (assuming the first element to be ON. *páll*) or 'spike' (supposing the whole word to be an ON. variant of OE. *palstr* or *palster*¹). If we accept the first derivation, as high authority bids us,² we have further to allow that the word probably meant 'hoe-staff', for *páll* (Lat. *pālus*; Fr. *pelle*) generally signified in Old Norse, as it still does in modern Icelandic, a 'narrow iron spade'. The Icelanders have, moreover, a turf-spade that goes by the name (so it is stated) of *pálstafr*, and, having been told this, we clinch matters by saying outright that our word *palstave* is simply the name of an Icelandic agricultural implement, adding that we have borrowed the name for a special variety of prehistoric bronze tool that bears in some small degree a resemblance to the business-end of the Icelandic turf-hoe.

The stages whereby this standard explanation was developed are fairly easy to follow. As early as 1825 J. H. Jahn commented on the word *pálstafr* which he had come across several times in the saga-literature of the north;³ he said that judging by the passages concerned the thing was obviously some kind of big spear, but that the etymology of the name suggested with equal force that it was in reality more of an agricultural implement than a weapon. As this remark implies, he supposed that the first element was *páll*, a spade; but he was also prepared to consider the claims of *pállr*, a step, and by way of compromise he gave as his notion of a palstave a most interesting drawing of a stepped-hoe or digging-stick (fig. 1). He was writing about weapons, and this illustration appears in a plate otherwise devoted entirely to weapons; but Jahn felt that this hoe might have been a formidable weapon upon occasions and would do perfectly well as a representation of the palstaves used in ancient sea-fights.



FIG. 1. STEPPED-HOE OR DIGGING-STICK (AFTER JAHN)

¹ H. Falk, *Altnordische Waffenkunde*, Oslo, 1914, p. 76.

² See, for instance, the *Oxford English Dictionary*.

³ *Nordens, især Danmarks Krigsvæsen*, Copenhagen, 1825, p. 231.

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The historians and philologists did not seem inclined to debate this point, and now was the time for the archaeologists to step in. When exactly they first appropriated the word I cannot say, but it must have been very soon after Jahn's book appeared, for in Molbech's *Dansk Ordbog* of 1833 *paalstav* is defined as (A) an ancient variety of spear and (B) a chisel-like implement found in barrows; thus it is no surprise to find that Worsaae used the word in its modern archaeological sense in 1843.⁴ What will interest us, however, is that by the middle of the 19th century we find that the archaeologists had not merely accustomed themselves to the use of 'palstave', but were making up their minds about its meaning, arriving finally at the conclusion that the word was not the obsolete name of a forgotten weapon, but the *living* name of an Icelandic farm-implement. This, of course, was much more than Jahn had said, for he had simply observed that 'palstave' *ought* to mean a digging-tool of some kind; but his remarkable picture had given the archaeologists all that they wanted and caused them temporarily to forget the supposed spear-like palstave of the sagas.

The new phase in the word's history begins with J. B. Sorterup's 'Guide' to the National Museum at Copenhagen, published in 1846, for it is there observed⁵ that one variety of palstave exhibited in the collection (a broad and flat kind) resembled a gardening or agricultural tool lately used in Iceland. This in itself was an innocent and quite justifiable statement, but it happened that it caught the eye of an Englishman, Mr James Yates, who was at that time engaged in proving to the world that bronze celts were first and foremost instruments for destroying fortifications and making earthworks and roads. He read Sorterup's comment on the Danish palstaves and he was jubilant. 'If then', he said, 'we have *ample proof* (my italics) that these instruments were used in tilling the soil, we may the more readily admit their employment in any military operations which required the same kind of manual labour'.⁶ And to add to his pleasure, another Dane, the eminent Dr C. J. Thomsen, thereupon sent to England pictures of two of the Icelandic tools which he said were still in use and *were called palstaves* (my italics again); they were employed, Dr Thomsen averred, 'to break the ice in winter, and to

⁴ *Danmarks Oldtid*, p. 22.

⁵ *Kurze Übersicht—im Kopenhagener Museum*, p. 24.

⁶ *Arch. Journ.*, 1849, VI, 371.

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part the clods of earth, which, in Iceland, is dug and not ploughed'. Mr Yates naturally published these illustrations without delay⁷ and was quick to observe how the little bit about digging and not ploughing suited his own views as to the celt being, when not used for picking walls to pieces, an agricultural *dolabra*. 'Nec minus dolabra quam vomere bubulcus utatur' he quotes.⁸

It is obvious, therefore, that thanks to Mr Yates and Dr Thomsen, we have made a very rapid advance. Sorterup had said that *some* Danish palstaves looked like an Icelandic agricultural implement, and we see at once that this is 'ample proof' that *all* celts *are* agricultural implements. Moreover, we are informed that the Icelandic implement in question was actually called a palstave, and as we already know that the Icelandic palstave resembles the prehistoric palstave, we really do not need to go hunting about among the sagas in order to discover the origins of the word. The bronze implement was a spade, and we call it a palstave because that is the name of modern spades just like it. A slick, satisfactory result which I for one regard with sympathetic respect; I have played about a little with 'ample proof' myself.

This was the position when Sir John Evans wrote his great book on bronze implements. We can see that by 1881 the turf-hoe analogy had made considerable headway, because in introducing the word palstave he is able to tell us without further ado that the Scandinavians called a certain variety of bronze implement by this name, on account of its resemblance to a spade still in use in Iceland and called a *paalstab*.⁹ Sir John very reasonably left the matter there, since, as he said, the name was by this time well-established; so he paused only to correct Mr Yates's erroneous derivation of the *pdll*-element from *pala*, to labour, and to remark that besides its modern

⁷ *Arch. Journ.*, 1850, VII, 74.

⁸ Naturally there is much to be said for Mr Yates's view, but the matter of the probable use of the prehistoric palstave does not concern us here. Mr Crawford, however, has reminded me of one important piece of evidence under this heading, namely the discovery of a broken palstave at the bottom of a ditch whose chalk walls bore long spud-scars that fitted the cutting end of the bronze implement; this was in the 'Angle Ditch' near Wor Barrow on Handley Down, Dorset (Pitt-Rivers. *Cranborne Chase*, IV, 104, pl. 263, 1). I may also add that some remarks about the possible use of the palstave in making canoes will be found in *Antiquaries Journal*, VI, pp. 125, 319.

⁹ *Ancient Bronze Implements*, London, 1881, p. 71.

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meaning of spade the word seems to have had an older meaning, signifying originally a weapon of some kind.

The first point that I want to make myself is that I believe Dr Thomsen was misinformed about the Icelanders calling their turf-spade a *pálstafr*. Of course, if an Icelandic can assure me positively that this word really was current in his country at the beginning of the 19th century and meant a kind of spade, I shall have to apologize handsomely for my present doubts on the subject; but I say here that I can discover no evidence, either on my own account or as a result of enquiries among Icelanders, that *pálstafr* is, or was, an equivalent of the *páll*. For that is what Dr Thomsen illustrated and Mr Yates welcomed so eagerly, a turf-hoe known as a *páll* or *pálreka*, which are names that the Icelanders know quite well. I can only suggest that it was because the handle of this is called a *palskaft*, or perhaps because the sod cut by it is known as a *palltorfa*, that the *páll* and the *pálstafr* were confused. I may perhaps add that in any event the comparison between the turf-hoe and the bronze implement was not particularly felicitous, since the illustrated *pallar* were socketed and not adapted for fitting into a cleft shaft; but this lack of real resemblance need not detain us here, especially as many other turf-spades are flanged, not socketed, and we must concede that the bronze palstave would certainly make a useful hoe.

I say then, that we must set aside the Icelandic turf-hoe on the grounds that it was not called a palstave at all (until Dr Thomsen said that it was), and if I am right here it follows that the archaeologists' explanation of the naming of the bronze implements crumbles straightway into dust, for we are left with nothing but an unconvincing resemblance between the palstave and the modern hoe. Refusing, therefore, to be misled by the *páll* and its distant likeness to the palstave, we must return to Sir John Evans's concluding remark and accept as the main problem the matter of what the authentic but obsolete word *pálstafr* meant. As Jahn said long ago this is found on several occasions in ancient Icelandic literature, and I do not think there is any doubt that he was right in assuming the object itself to have been some sort of missile weapon; indeed we actually find the expression 'spears, palstaves, and all kinds of missiles'.¹⁰ It is quite true that we also find 'halberds, palstaves, and spears'¹¹ grouped

¹⁰ *Karlamagnús saga* (ed. Unger), 81.

¹¹ *Fornmanna sögur* (ed. Copenhagen 1825-35), vii, 265.

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together, and that Dasent translated the word *pálstafr* as halberd in the passage in *Njal's saga* where a mounted man holding a palstave in his hand parleys with Queen Gormflaith before the Battle of Clontarf,¹² but there are at least two other passages that are, like the first I quoted, heavily in favour of the palstave being a missile; these occur in the 'King's Mirror' (*Konungs Skjuggsjá*), a noble didactic work that was written in Norway in the period 1220-1260. The first of them reads,

every other kind of missile (*skotwápn*) [such as] spears and palstaves, both heavy and light.¹³

In the second passage the father explains to his son that in a sea-fight it is as well to be provided with 'two spears (*spjot*) which are not to be thrown, one long and one short', and he then adds,

'One must have various missiles on board ship, both heavy *pálstafr* and light flying javelins (*gafloc*); try to hit an enemy's shield with a *pálstafr*, and then when his shield is forced away from him [by the weight of the blow], attack him with a light javelin, if you cannot reach him with a long-handled spear'.¹⁴

Thus we see that in the early 13th century the palstave was a fairly heavy missile that was discharged before one could reach the enemy with a long thrusting weapon, and there seems to me to be only one thing that it could have been, namely a throwing-axe. The alternative is some kind of middle-weight spear, something between a javelin and a pike, but as I suppose that this would not have been called anything but a 'spear', I imagine that the palstave was a missile of another sort, something distinct enough to have a name of its own. It is true that no throwing-axes of this early date have survived, but we have 'Wurfbeile' of the 15th and 16th centuries to show us the kind of thing the weapon may have been, an axe-blade, halberd-shaped or bearded, mounted on a shaft 15 inches to 2 feet long (fig. 2).¹⁵ I

¹² *Njala* (ed. Halle), 157; trans. (Dasent), 156.

¹³ *Kgs.* 89 (ed. Brenner, p. 105).

¹⁴ *Kgs.* 86 (ed. Brenner, p. 101). The translation of this passage has been made by Mr Jón Stefánsson to whom I am indebted for considerable help in the preparation of these notes. There is an English translation of the whole work by L. M. Larson (*New York*, 1917).

¹⁵ See Walter Rose, *Zeits. f. hist. Waffenkunde*, II, pp. 239, 355; H. Stöcklein, *ib.*, N. F. II (1926), p. 17. I have to thank Mr J. G. Mann for these references.

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concede that on this view the expression 'heavy palstave' is difficult to understand, but I suppose there may have been throwing-axes of various weights. It is a weak case, I know; but as we must rule out angons, javelins, and spears, and as I imagine a spiked club or mace is out of the question, there seems to be nothing for it but to say that the early medieval palstave was a throwing-axe, a 13th century version of the 'francisca' of the Merovingian Franks and of the Anglo-Saxons. It only remains for me to point out, then, that there is no evidence to show that the weapon itself was characteristically Icelandic; in fact I do not believe that it was even a typical viking weapon. Professor Halldór Hermannsson has remarked to me that wherever the word occurs in Old Norse literature 'it is either in translated sagas or in descriptions of battles outside Iceland'. Certainly the palstaves of the *King's Mirror* must be assigned not to the Icelanders or the Norsemen in their homes, but to the mainland armies of Europe.

We have still to face, however, a very ugly little problem, namely, why should this missile be called by the Norsemen a 'pole-staff' when it was, so far as one can tell, a short-handled axe? On this point, knowing it to be a serious one, I can only offer with becoming hesitation my opinion that *páll-stafr* is a hopeless and unlikely combination, and that it does not really represent the origin of the word *pálstafr*. In the last resort the two elements are synonymous (pole-staff), but even if one takes *páll* to mean spade I think *páll-stafr* is a very improbable and meaningless experiment in word-formation, quite apart from the fact that I should expect a *skepti* rather than a *stafr* element if we are going to insist that the handle of the weapon was part of its name. In short, I do not believe that *pálstafr* is really of Old Norse coining, and I return to the derivation suggested by Hjalmar Falk who supposed that it was simply a Norse version of the Anglo-Saxon word *palstr* or *palster*. This means a 'spike', which I admit does not make things very much easier, but I daresay that in the Norse form we have not got the complete name of the weapon. A spike at the end of the shaft is quite ordinary in the later Wurfbeile and may have been characteristic of the earlier examples; perhaps if we combine *palstr* with a 'throwing' element like *wiver*¹⁵ we may approach the original name that the Norsemen transformed into palstave; but this is the flimsiest kind of guesswork, and I ought to

¹⁵ Cf. M. L. Keller, *Anglo-Saxon Weapon Names*. Heidelberg, 1906, p. 215.

THE WORD 'PALSTAVE'

add that, as we are dealing with the Crusade Period, we must not exclude the possibility of an origin altogether foreign to the German world.

To sum up, I have rejected the explanation of a 'palstave' as the lately current name of an Icelandic turf-hoe ; yet I have dragged the poor word back from the daylight certainty of Mr Yates's writings only to hide it away again in a profound, gloomy, historical and philological mist. This is, I feel, a horrid thing to do ; let me say, then, that I shall be the first to cheer when some learned rescuer gives 'palstave' back to us with a meaning that we can square with the saga-passages I have quoted.

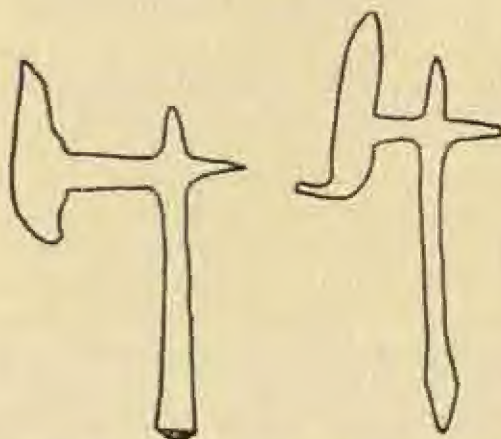


FIG. 2. MEDIEVAL THROWING-AXES FROM GERMANY (AFTER STÖCKLEIN)

Excavations at Susa (Persia), 1930-1931

by R. DE MECQUENEM

Director of the French Archaeological Mission in Susiana

THE ruins of ancient Susa, prior to the Achaemenid period (sixth century B.C.), are shaped like a square, each side of which is 700 metres long. The angles face the cardinal points. The southern angle is however prolonged by an external mound, which M. Dieulafoy has called the 'the Dungeon'.

The acropolis of Susa occupies the main portion of the north-western side and we are continuing there the systematic exploration inaugurated by M. de Morgan. This year we widened and lengthened a trench which last season had reached the natural soil, and here we found a big ditch dug in the middle Elamite period. It was 8 metres wide, and 6.25 metres deep; we excavated 10.25 metres of its length without reaching its other end. The sides were covered by raw (sun-dried) bricks, which in some places were protected by thick walls of kiln-fired bricks. Some of these burnt bricks have cuneiform inscriptions recording the dedication of Elamite temples. In the silting of this ditch we found fragments of arragonite vases, often inscribed with the names of the Achaemenid sovereigns Xerxes and Artaxerxes, and fragments of horns and ears of the stone protomas of the bulls forming the capitals of the columns of the Apadana. It seems that this ditch was originally a tank of water, belonging to the Elamite temples of the God Shushinak and of the Goddess Nin-Har-Shag. Water was brought into the tank by means of an aqueduct. The ditch was filled up gradually during the post-Achaemenid periods (Parthian and Sassanid). The fact that the ground surrounding the ditch corresponded to levels anterior to the third millennium B.C., was very perplexing until the real nature of the ditch was fully ascertained. However, during the course of clearing the remains we found a fragment of the pedestal of a Sumerian statue, chiselled out of a blue stone. Judging from its style it can be dated to the period of Agade, 2700 B.C. The fragment has a bas-relief representing the busts of two bearded men, probably the followers of the king. They are bare-headed, the

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hair is abundant and is gathered on the neck in a long thick lock, whereas two long tresses are wound round the head and brought to the forehead, and fastened together in a knot. They are represented in profile, with eyes almost *de face*, long-nosed, thick-lipped, and long-necked; the beards are long and pointed, and descend to the line of the shoulder. One of the men seems to be clad in a tunic; his fore-arms are raised upwards, and his hands rest on the chest; he is perhaps a servant. The other wears a fleecy garment, which leaves the right arm and the chest bare; the position of his arm shows that he is carrying a weapon.

The section of the rest of this trench was regular. On the top we found the unpainted pottery of Susa II. It was represented



FIG. 1. DRAWINGS ON BONE IMPLEMENTS FOUND AT SUSA

by vases with a spout, craters with four protuberances, having lateral holes for suspension. These vases have a red slip and are decorated with designs in relief. Some have twisted handles, others are without slip, and decorated with incised geometrical designs. This level seems to belong to the beginning of the period of the Awan dynasty of Susa, which flourished about 3100 B.C. Beneath it we found another type of pottery, represented by vases made of coarse but well-baked clay; vases with round bottoms and wide mouths, small jugs with long open spouts and with long pierced handles, large and small vases with twisted handles. There were also sickles of burned clay, stone hammers and axes, and flat seals. With the exception of one double-axe and small awls with handles of

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hardened bitumen, copper implements were rare. Moreover, we found here two awls and a stiletto made of gazelle bone, some with primitive drawings (fig. 3).

During the season 1930, about fifty of these bone implements were found; complete drawings of them were published by Rev. Father Scheil in *Revue d'Assyriologie*. Four of the more interesting examples are reproduced here (fig. 1):—(1) the figure of a man standing picking from a tree and followed by a small fox (?); (2) a gazelle, a man, and a fowl; (3, 4) men on horseback.*

Below these levels, the depth of which is 8 metres, corresponding to different civilizations which we are unable to determine, we came across another level, 2 metres thick, where we found fragments of painted pottery of Susa 1, together with others of a red slip-ware. The latter, though remarkable for its technique, was without any decoration whatsoever. This pottery was found in the deep trench opened by M. de Morgan just above the painted one. But it was not possible for us to ascertain whether the painted and the unpainted pottery found in our trench were contemporary. The one nearly complete painted vase was a goblet of middle size. It was decorated with the figures of three poisonous snakes (fig. 4.1). There was no trace of copper in this section, but we found button-shaped seals of stone or bitumen with primitive engravings, and small clay figurines of animals, such as wild goats, dogs, rams, and birds; they were sometimes decorated with coloured dots. In this trench we came to the natural soil at a depth of 10 metres.

In an ancient well 5 metres deep and protected on the inside with big broad rings of earthenware, we found, bead by bead, a necklace of carnelian, agate, and other semi-precious stones, two small, nicely chiselled and well-finished figurines of lions, in carnelian, forming its chief ornaments. It was dated to the third dynasty of Ur, about 2300 B.C.

Discoveries resulting from systematic exploration of the Acropolis are too scanty to justify the employment of all our resources. During the last eight years, therefore, we have been exploring the southwest part of the ancient town (fig. 5). The mounds on this side are as high as the Acropolis was, *viz.*, about 25 metres above the level of the plain. They are separated from the latter by a ravine, probably the bed of

* The great cultural importance of this discovery will at once be apparent; it is the earliest evidence of the domestication of the horse.—EDITOR.

an ancient canal. The town-wall on this side measures about 500 metres in length. We have ascertained that on this side there were three ancient mounds, separated from one another by ravines, and connected by gates. Their diameter, measured at the height of approximately 12 metres from the level of the plain, is about 50 metres. They are artificial, *i.e.*, composed of the tombs, belonging to different periods, which are actually lying over one another in regular succession. Remains of buildings, perhaps small sanctuaries, wells, and potter's kilns are generally found in these cemeteries. During the Achaemenid period the tops of these mounds were very often levelled for building purposes, and this practice was continued up to the time of the Abbassides. A few Achaemenid ruins exist here; they are the foundations of buildings in which a thick layer of gravel was employed, and a few square feet of a red-coloured pavement like that found in the palace of the Apadana.

There are many vestiges of the Sassanid epoch. We excavated long thick walls of raw bricks, and several small rooms. The importance of the houses is shown by the great number of drainage-wells sunk under the ground-floor. At the top of a well, big jars, at least three, are placed, their bottoms buried in the ground which forms the inner side of the well. They are placed in a slanting position, so that their mouths touch one another, exactly above the centre of the well; a square brick with a sufficiently big hole is placed over the jars to facilitate the flow of water and the space left between the jars is filled in by raw bricks. We noticed that near the mouths of these wells children were buried in jars, or sometimes in small sarcophagi of burnt clay. Vases of burnt clay, with or without glaze, were found near these tombs; they were bowls, water-flasks, and lamps. Near the skeletons there were beads of carnelian or glazed paste, small dolls of carved bones, and sometimes copper coins. Tombs of adults were almost absent on these mounds, as the Sassanid cemetery is situated outside the town.

Ruins of Arab construction, generally on the surface of the mounds, are very numerous. Old materials were always in demand and re-used for new buildings. We made plans of many such buildings, but not much of interest could be deduced from them. It is certain that the entrances of houses were often indicated by two columns built of large bricks, and coated with plaster, and the inner rooms were narrow; the walls had a coating of plaster; and on the façades coarse geometrical designs were often painted in black and red.

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The houses had cellars, and sometimes flights of stairs leading down to a well. When one well was filled, it was necessary to sink another. Fragments of glazed and unglazed vases were found in them, some of which were of interest (fig. 6). On the summit of the mounds this level of the Arab period is about 4 metres thick, and in the space between two mounds it is more than 8 metres thick; the level of the relatively recent ruins is still lower in the interior of the town. The burial-mounds of the southwestern border of the town formed a regular rampart round it. On their summit a fortification was erected, but the principal fortification of the town was the mounds themselves, formed in the course of several centuries by the superimposed ancestral graves.

During this season we explored two of these three cemeteries. Their upper level contains Neo-Babylonian tombs, and below them are those of the last Elamite epoch. These tombs differ from one another only in their grave-furniture; otherwise they all have the same inner arrangement. The dead body was laid either on the bare ground, or in jars, or in vast vaults, constructed with raw or burnt bricks.

In the tombs were found vases (fig. 4.2) with or without glaze, sometimes good phials of moulded and coloured glass, copper implements, copper vases, copper arms, rings and amulets, a few trinkets, especially necklaces of carnelian beads, and figurines of burnt clay. Below these were tombs of the middle Elamite period, the burials being in jars and vaults (fig. 7). The latter were as a rule smaller than those mentioned above. Inscribed cuneiform tablets, mostly commercial contracts and school-exercises, were often deposited in them. Occasionally models of human heads, of unburnt clay, with traces of paint or gilding were found. They were perhaps placed in the vault at the time of the second inhumation as substitutes of missing or much disfigured heads. The man is represented with a straight nose, thin lips, and curled hair and beard, whereas the features of the woman are similar to those of small dolls of the same period. Nevertheless we must admit that as early as the twelfth century B.C. Elamite artists were skilled in reproducing human features almost life-size. In the first period of Elam, 1500 B.C., the vaults were generally for one person; sarcophagi (fig. 8) of burnt clay, shaped like a bath-tub and covered with a lid, are sometimes found, whereas during the period from the twenty-fifth down to the fifteenth century they were regularly used. During this latter period we found no funeral vaults but only burial

jars. In the earlier period bodies of children were wrapped in matting and buried in the ground. Although clay tablets, seals and cylinders are found there is nothing by which to identify those buried in the tombs.

In one trench, which contained many tombs dating from the twenty-fifth to the fifteenth century B.C., were found balance-scales and weights which seem to indicate the burial of merchant-traders. The weights are of polished stones, hardened bitumen, limestone, hematite; occasionally of quartz and agate. They are shaped like elongated ellipsoids, like ducks and sometimes like frogs, insects, or shells. Inscriptions or marks indicate their value; the *mine*, *sicle* or *small mine*. Large weights are multiples of the *mine* or the *sicle*; the small ones are multiples of the grain of corn or barley. There is no doubt that the ellipsoid form of the weights is derived from that of the grain. The duck-shaped Chaldean weights are very difficult to explain, but we find onomastic relations between the duck or the goose and the denomination of weights or the action of weighing, *e.g.*, the unit of weight in Persia is the *butman* and *but* means 'duck' in Arabic; *vaz* in Arabic means 'goose' and *vazana* means 'to weigh'. The *oque* is another unit of weight in the East, Iraq and Syria, and the word signifies 'goose'.

In this level was found an earthen pot filled with small ingots and bits of silver wire, silver bracelets, six pairs of earrings, and two heads of walking sticks. The bracelets are large open rings with several engraved notches. The earrings are shell-shaped, and have sockets for inserting semi-precious stones. The head of one of the sticks is like the knob of a round mace; the other is shaped like the head and neck of a bird, with a tuft of feathers (fig. 9).

In the lower level we found rectangular pits used as graves—1 metre by 2 metres. The body was placed between two mats; vases of clay, copper, and arragonite were lying by the head and at the side of the body (fig. 10). Among the types of pottery, commonly found in this level, we may mention high, conical, and wide-mouthed vases, with a base (fig. 2). We had already found similar vases in tombs of the twenty-fifth century B.C. in the upper level, but these had flat handles on which a human bust was roughly indicated. Vases with similar handles are known from Kish, which M. Watelin, director of excavations, attributes to the Agade period (fig. 11). We attribute them to the fourth and fifth dynasties of Uruk. The copper vases have complicated forms and show that coppersmiths possessed a far

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greater skill in the handling of the material at their disposal than the potters. Stone vases are represented only by coarse bowls. Copper arms include lance-heads (fig. 15.1), formed out of a single piece of metal with square sections, and fastened in the wooden shaft by means of a nail driven through it transversely (the shaft was further strengthened by winding around it a copper band); javelin heads with a central reinforcement; arrow-heads (fig. 15.10), made like javelin-heads or cut in a piece of metal, sometimes with two points; daggers



FIG. 2. TYPES OF POTTERY, SUSA

(fig. 16) with a small tongue fixed in the wooden handle with two rivets; blades of daggers, made of two thin pieces of metal covering a shaped piece of wood between them—these pieces were found joined together by the copper oxide; axes (fig. 15.11, 12, 14) with the edge parallel to the ring through which the handle passes (these rings are without decoration, although they are contemporaneous with the axes found at Nihavand and in Luristan). Copper mirrors were also found. The mirror is a round flat piece of copper, well polished, with a small tongue, by means of which it was fixed to a handle (fig. 15.6); on one side can be seen traces of a piece of matting, which was probably

PLATE I



FIG. 3. AWLS AND STILETTO MADE OF GAZELLE BONE, WITH PRIMITIVE DRAWINGS

PLATE II



Fig. 4

- (a) PAINTED VASE WITH FIGURES OF SNAKES, SUSA
(b) VASE OF MOULDED GLASS FROM TOMB AT SUSA

PLATE III



FIG. 3. SOUTHWEST VIEW OF THE RUINS OF SUSA

PLATE IV



FIG. 6 DECORATED CUP, SAMARA WARE

PLATE V



FIG. 7. BRICK-VAULT AT SUSA

PLATE VI



FIG. 8. SARGOPHAGUS OF BURNT CLAY, SUSA

PLATE VII



FIG. 96. HEADS OF WALKING STICKS AND LARCHING (CENTRE), SUSA

PLATE VIII



FIG. 10. VESSELS OF CLAY, COPPER, AND ARRAGONITE PLACED WITH BURIAL, SUSAN

PLATE IX



FIG. 21. VASE FROM SUSA

PLATE X



FIG. 122. WOODEN SHIELD COVERED WITH HIDE STUDDED WITH COPPER NAILS, WITH SHORT COPPER ROD FOR HANDLE.

PLATE XI



FIG. 15. FUNERARY VASE, SUSAN

PLATE XII



FIG. 14. CAPITAL FROM ACHAEMENID PALACE, SUSA

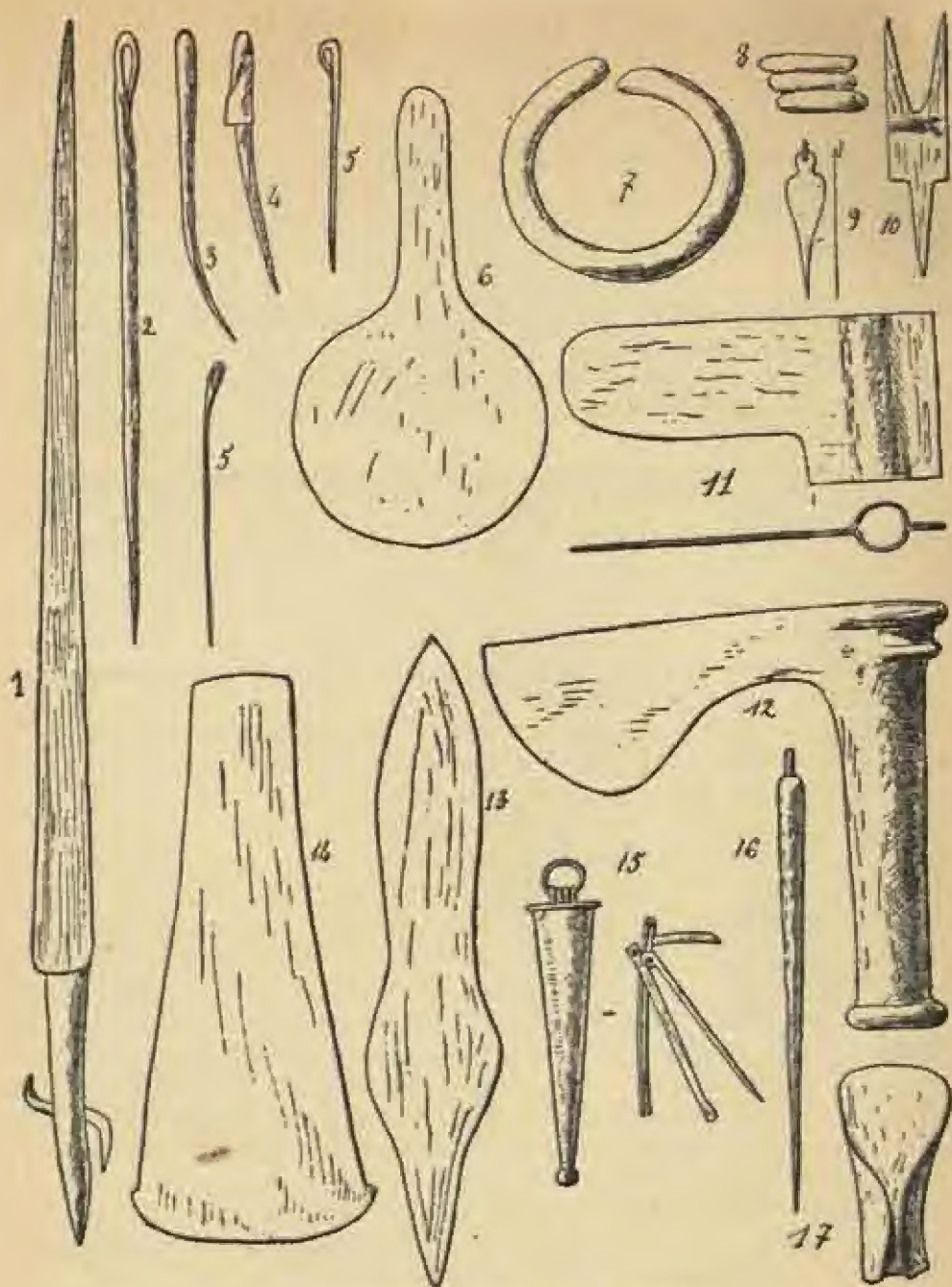


FIG. 15. ARTICLES OF COPPER FOUND AT SUSU

1, Head of Lance. 2-5, Pins and needles. 6, Mirror. 7, Armlet. 8, Ring. 9, Silver armlet.
10, Arrowhead. 11-12, Axes. 13, Head of javelin. 14, Toilet requisites. 15, Pin. 17, Hoe

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inserted in a wooden frame. There are also rings, earrings, and bracelets of copper; and small horns of copper with the necessary toilet-implements made of the same metal (fig. 15.15). These horns were found in graves of both men and women. The toilet implements include small pins with pointed or blunt ends, tied together with a small copper ring, each for a special use; a pair of pincers for plucking out hairs, needles for tattooing, and palettes for applying colours to the face—black and yellow colours were actually found in bivalve shells. There were many cylinder-seals in the graves, but no well-preserved examples owing to the humidity of the ground.

On another site there were graves with painted pottery, similar to that of the Acropolis and the Apadana. The disposition of the bodies and the grave-furniture was the same. The copper implements are the same, though there were copper ewers, with very long open spouts and wide mouths. For the first time shields, made of wood covered with hide fixed on its periphery with copper nails, were found. The nails have conical heads so closely driven in the wood that there was hardly any space between them. The shield (fig. 12) was oval and measured .77 metres by .68. The handle was strengthened by nailing a short copper rod to the wood, on the small axis of the oval. The wood had completely perished, leaving only a white trace with fibrous lines on the ground, whereas we could recognize the leather in the brownish mass which it had become. As the impressions left in the ground by the perishable material of the shield were very faint, we think that its covering in the middle was perhaps made of matting and leather; but the diameter of the nails, .025 to .03 metre, and the curve of the copper handle, show that the frame was about 4 centimetres thick. We may note here that in 1922 we found on the Apadana an object which we then supposed to be the outer copper rim of a wheel of a wooden car. The rim was in six parts, forming together a circle with the diameter of one metre; every one of these parts had three copper projections like nails fixed to it by rivets; by means of these projections the copper rim was fixed to the wood of the wheel. Bits of wood were still sticking in the groove of the rim and around the projections. A copper wire, curved outwards at its extremities like a hook, and having a ring tied with a thin wire in its middle, lay on the rim. At the time of the discovery we could think of no other purpose which this object could have served but that of the wheel of a small car, and we took the curved wire for a part of the harness.

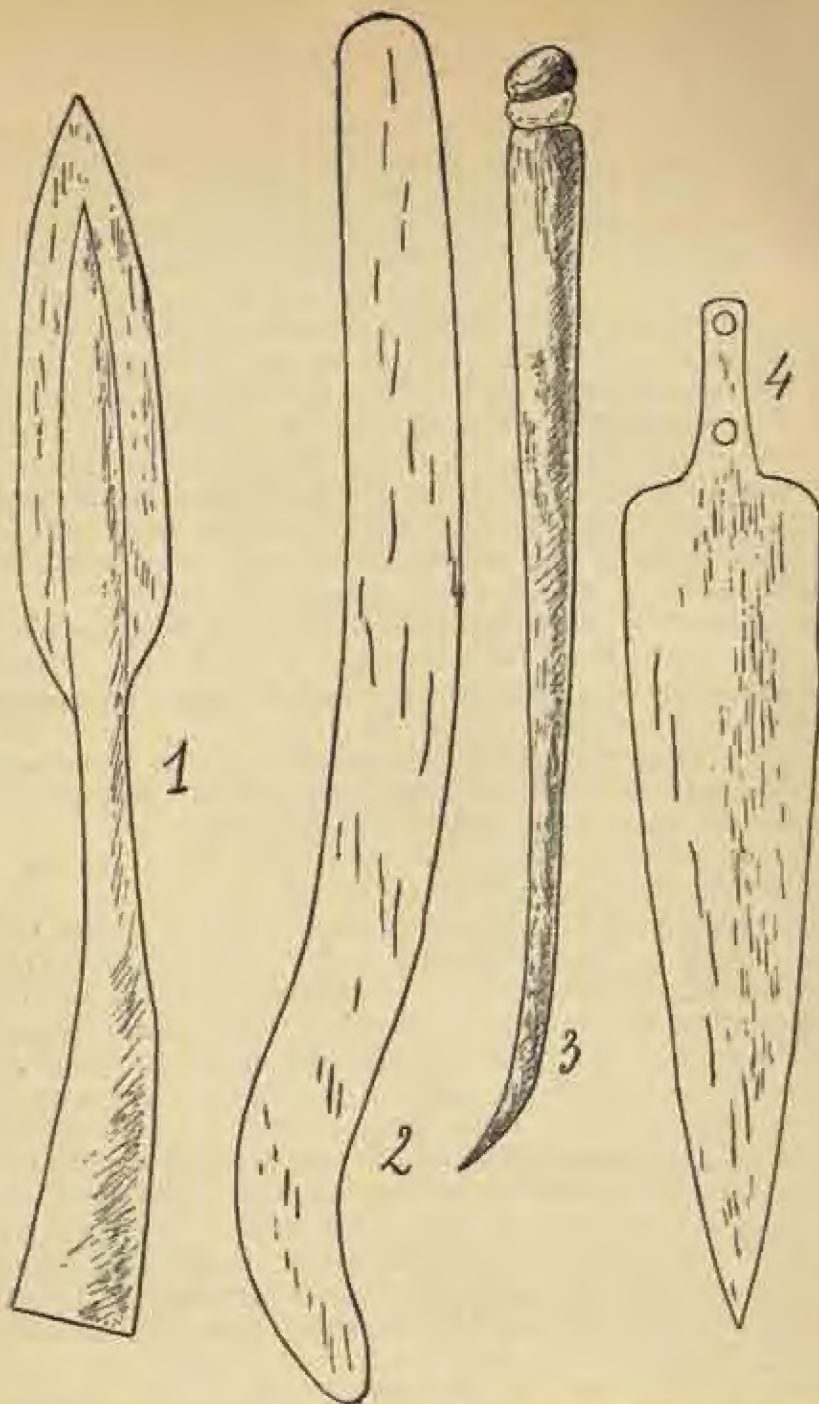


FIG. 16. 1, Head of javelin. 2, Blade of dagger. 3, Stiletto with lapis-lazuli bead. 4, Dagger.

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We are now of opinion that this object also was a shield with its handle. This circular shield was of the twentieth century B.C. This season we found three shields like that described above.

The funerary ware of the graves of the lower level comprises big vessels of yellow clay, decorated with a twisted band and with a small protuberance on the shoulder, and painted pottery. This season we came across two new designs in the upper levels—found in tombs of the 20th century. They are small vases, one of which is decorated with a serpent, the other with a line of dots between two bands. Nevertheless this fact remains exceptional. Underneath this level in the tombs of the 23rd century there were vases with wide mouths and necks painted red. In still lower levels there is similar pottery: bowls of red clay decorated with undulated lines, and small bottles painted with geometrical designs. Such vases were found on the Apadana. In the graves referred to painted pottery is general; the vessels are big craters with four knobs with lateral holes, conical vases without a base, and bowls with a conical base (fig. 13). Generally the colours are not fast and are easily washed away. They are often found sticking to the damp earth, when the vase has been removed from it. The colours are red, black, and white, and all three are often used on the same vase. The designs are generally geometrical, but figures of birds, eagles and ducks, and fish occur.

Below these graves nothing else was found but a few fragments of red slip-ware pottery, and below that the natural soil. This red ceramic is most probably analogous to Susa II, found up to now only on the Acropolis. Susa II *bis* would probably be contemporary with the Agade period, about 2700 B.C. From the results of our exploration of the Royal City we are not sure whether we should find anywhere else, except on the Acropolis, the still undiscovered tombs of the period intermediate between Susa I and 3000 B.C.

Since 1929 we have been investigating the summit of the 'Dungeon'. This season we worked intensively on this point and cleared it completely down to a depth of 2 metres. This work brought to light floors of Sassanid buildings, oriented south and north. The main western entrance was marked by two square bases of brick columns, on which a torus was discernible by traces of plaster. The external wall was on the very edge of the mound. The earth beneath the foundations of this wall was prevented from sliding by placing in a vertical position long Parthian jars filled with earth one on top of the other in two or three rows (according to the nature of the mound).

EXCAVATIONS AT SUSA (PERSIA), 1930-1931

exactly as nowadays trunks of trees are employed for a similar purpose. The walls were completely destroyed. We observed, while digging 50 centimetres underneath the flooring, that the original plan of the building was modified five times. On the south side we cleared a square hall, about 8 metres long on each of its sides, with two entrances, one to the north, the other to the west. The breadth of the gates was marked by big stones, supporting the door-hinges. Three of these stones were originally bases of columns, whereas the fourth was a fragment of a cornice; all these stones are evidently Achaemenid. They were placed in the holes destined to receive them, and the space between them and the sides of the hole was filled up with debris, among which were two fragments of marble figurines in the Parthian style. One of them is a bust with a well-preserved head. It is a rare find in Susa. The ceiling of the hall was supported by four columns. We continued our excavations 1.8 metre under the flooring, and discovered the foundations of thick walls of raw bricks, dividing the square in small rooms, which served perhaps as vaulted cellars of the original Parthian building. The Sassanid floorings were of burnt bricks, covered with a coating of plaster which was sometimes coloured red. On the floor were the two big bases of columns in limestone, with Greek graffiti, which were discovered by William Loftus in 1851. An entrance to a gate was marked by two capitals of Parthian columns, another by two small bases of Achaemenid date. One of these had trilingual inscriptions of Xerxes; one big base of a column of the same period was inscribed by Artaxerxes Mnemon and was in the hall called by him 'Paradayadam'. The most curious debris of the Achaemenid palace, thus re-used, is the big capital of a column (fig. 14). Its upper part was square; it had a round shaft, decorated with a ring of big knobs between two rows of beads, from which descended curvilinear flutings; the lower part of this capital is missing. An aqueduct, roughly traced with big slabs of marble, gave us a few Greek inscriptions; a rectangular slab was decorated on all four sides with low reliefs, unfortunately much damaged, representing a city-wall with battlements and turrets, and a gate on each of its two broad sides. Further, two fragments of limestone statues were found on the pavement. As they are very roughly executed, we suppose that they were probably coated with stucco and painted. One of them, about 70 centimetres high, represents a man, barefoot and standing; he is clothed in a long tunic, a mantle covers his back; the latter is held on the shoulders by a kind of

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scarf, which, passing under the left shoulder and thence around the waist, comes again in front, where it is fixed on the right shoulder ; the right hand and the arm are raised in the gesture of benediction ; the left hand is closed, showing a small hole in the fist, in which an object was fixed by means of a metallic wire ; the head of the statue is missing. This statue looks, in fact, like that of a Christian saint, and it is quite possible that the building may have been a church, erected on the site of an old Selucid temple or of the citadel. The other fragment is a torso of a similar statue, with the arm covered by a scarf thrown over the shoulder. These fragments seem to be Sassanid.

Beneath these floorings we discovered the foundation of the building. It is formed of walls of raw bricks, separated by narrow vertical drains filled up with gravel. The breadth of this filling varies between 20 and 40 centimetres, which appears to be too small to correspond to the inner walls ; still the plan they trace is that of rooms, passages, and entrances. We expected to find beneath these constructions of the later epoch remains of an Achaemenid fortress or palace, but we were disappointed, because on the level of the Sassanid or Parthian foundations we found burial jars and vaults of the middle age of Elam. Thus the 'Dungeon' also has proved to be a burial-mound.

We are also excavating in the suburbs of Susa, my assistant, Dr J. M. Unvala, directing the work. He was fortunate enough to find in a mound a funeral-vault of the Sassanid epoch. Access was by a pit, which at the time of the discovery was closed by large jars. Seven steps led from the pit to a short gallery, which served as entrance to the vault proper, 2 metres broad and 3 metres long ; its height was 2.5 metres. The vault was almost completely filled up with soft earth in which, besides bones of several individuals, was a good collection of glazed and unglazed ceramic of the Sassanid epoch, the date of the vault. There are about fifty vases, lamps, pitchers with one or two handles, and bowls, as well as beads of glazed paste, a couple of knives, and an iron dagger. There was also a sarcophagus of burnt clay without the lid, placed north to south ; it contained three skulls and some bones. Similar funeral-vaults are still used in Persia by families of notables for second burials. It is probable that the vault in question had a similar purpose. It was, to use a Zoroastrian term, an *astodan* or ossuary. Of course, this does not prove that the owners of the vault were Zoroastrians ; it is again

EXCAVATIONS AT SUSA (PERSIA), 1930-1931

doubtful whether they were Christians or Jews, as no particular religious emblem was discovered in it. If they were the followers of the Iranian religion, it seems that they were practising the Elamite burial customs, and that the exposure of the dead to beasts and birds of prey was not as common in Susa as it was in the north and east of Persia, and as is the custom of the Parsees of India. Moreover, it suggests that the people of Susa were not good Zoroastrians, and it is perhaps for this reason that they rose in rebellion against Shahpur II, which led to his destruction of the town.

Roman Gaul: a Review*

by IAN A. RICHMOND

Director of the British School at Rome

ABOUT one-third of this book consists of a general introduction to the study of Roman Gaul; the rest is concerned with the Roman fortifications of the province; and all was to have been produced by Déchelette himself, but, after his untimely death in battle, it passed to Albert Grenier, Professeur d'Antiquités nationales et rhenanes à la Faculté des Lettres de Strasbourg. The choice is significant, for this is the first general publication by a French specialist on a Gaul which includes the Germanies, and it was therefore not beyond hope that pride and emulation would inspire an achievement equal to those of Espérandieu and Gsell, not to mention the German treatments which had already preceded it. But, from the start, cheapness has blighted the presentation, with that surety of touch in which Parisian publishers excel; and the editors have not chosen an author with those abilities in *vulgarization* which make French treatments, at their best, so very stimulating. The few scintillating remarks which brighten these pages are usually false lights, while the treatment as a whole lacks both the broad basis derived from a knowledge of general works, and the detailed acquaintance with the monuments and their analogies which is indispensable in a treatise upon fortification. It is amazing that anyone should now write upon Roman Gaul and omit from his bibliography Mommsen, Egger, Dragendorff, Folzer, Leitzmann, Loescheke, Krencker, Kruger, Knorr, Mélida, Macdonald, Parvân, Promis, Rostovtseff, Schulten and Schramm. The memory of Déchelette deserved better than this *regnum Galliarum* in scholarship.

* MANUEL D'ARCHÉOLOGIE PRÉHISTORIQUE CELTIQUE ET GALLO-ROMAINE (JOSEPH DÉCHELETTE). Volume V; ARCHÉOLOGIE GALLO-ROMAINE, par ALBERT GRENIER; *préface de CAMILLE JULLIAN. Première partie. Généralités—Travaux militaires. Editions A. Picard, Paris, 1931. pp. 1-v, 1-619, with 232 figs. and 3 folding-maps. Price 75 to 105 francs, according to binding.*

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The general introduction thus misses the points which have been for some time interesting the students of the wider *imperium*. Scanty is the treatment given to the questions of early-Roman penetration and late-Gallic survivals. Yet the one could have been stated succinctly by quoting from Cicero and Caesar; while the other is illustrated, linguistically, by the La Graufesenque *graffiti*, Jerome and Sidonius Apollinaris, and, artistically, by Espérandieu, as has already been attractively sketched by Collingwood. For in art emerges the native influence, sought in vain by M. Grenier, even in Narbonensis, as the sculptures of Vienne and St. Remy show. From the treatment of the economic problem one might conclude that pottery was the only Gallic industry. The question of water-transport is omitted. Nor is any significance attached to Sacrovir's revolt as an after-effect of the costly Augustan imposition of civilization, of which the character alone merits a special treatise. As for the survival of separatism, Haverfield's remarks on Brittany are a wholesome corrective to the idea that Breton individualism was less strong in Roman times than now, whatever Lugdunum or Paris might think. In agriculture, the opinion that the Romans found Gaul *en majeure partie aménagée pour l'agriculture* is altogether premature; and when a good distribution-map comes it will probably have in store surprises as striking as those in Britain, which might themselves have trained M. Grenier in caution. The touches on fourth-century life are clever, but shallow. It was hardly the pressure of the age that governed the depth of a sculptor's chiselling, and the appearance of haste in late-Roman building often connotes a greater mastery of material and improved technique rather than decadence. The generalizations end, however, with a more specialized theme. Gallic itineraries and epigraphical collections are rich in relics of the cantonal boundaries, and we welcome the connexion of actual boundary stones with the manuscript-drawings of the *agrimensores*. The validity of the equation *pagus*=*pays* is wisely left open; but that of *pagus*=clan was worth fuller development. The association of frontier-marks with the nymphs also raises interesting points on other frontiers.

Voltaire's observation on Caesar, which introduces military fortifications, is one of the bright spots in the book; and it is followed by a warning that Caesar's work can only be certainly identified at Mauchamp, Gergovia, Alesia and Puy d'Issolu. Mauchamp provides a fine series of *claviculae*, all internal, though it is difficult to guess this from figure 12. For these and other details, we depend upon

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Napoleon III, who seems to have known nothing of the *titulus* as a distinctive test for Roman work. But the omission of the fine long one at Urmitz is less excusable to-day ; and even Napoleon's diagrams outclass those of Colin. Only that of Fornerot begins to reach the standard of field-work which makes Glozelianism impossible. In detail, the Scottish analogies for *lilia* and calthrops merit quotation, and the confession that Schulten's *Numantia* was unavailable sheds an unhappy light upon the equipment of Strasbourg for Rhenanian studies ; a short trip across the frontier would have secured a copy for M. Grenier.

The next section deals with early garrisons in the Gallic interior, and misses out the *clades Lolliana* in the transition. Here enters the difficult question of what inferences may be drawn as to military occupation from the tombstones of soldiers, and we incline to accept Ritterling's view about those at Aunay. To supply the ever-missing analogies, the auxiliaries at Eysses, and the position, closely resemble Cirencester, while the site at Nérès, in its enviable complexity, smacks of Inchtuthill, Hod Hill, or Haltern. On the significance of these sites our author is wisely reticent. But he classifies with success a distinctive set of road-patrol quarters northeast of Dijon (where the post lay in the suburb of La Noue), and we could wish that the map (fig. 35) had marked all that the text mentions. Many of these sites would yield a fort like that of Arlaines in the Soissonais, where were elaborate stone buildings of two periods at least, and relics of a first-century occupation, presumably earlier still. This leads us to the Rhine frontier, of which a worthless sketch is given, distinguishing neither types nor history, and based only upon Xanten, Saalburg and Villenhaus. Such is the effect in post-war Rhenania of the Römisch-Germanische Kommission. The level of the next section, dealing with pseudo-Roman entrenchments, is higher.

The treatment of first-century town-walls is disappointing. Almost without exception, the illustrations are in the worst tradition of the provincial antiquary. The exceptions are borrowed from Wheeler and Formigé, the latter being incorrect. The account of Marseilles cries aloud for a plan ; and the wooden swallow-tail clamps in its wall are not necessarily pre-Roman, for there were plenty in the Augustan *Rostra*. Narbonne, Béziers and Toulouse were not worth inclusion. The account of Arles depends upon Wheeler, and is therefore good, but its implications are not fully appreciated in dealing either with Aix or Fréjus. Indeed, the section upon the latter

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town is very deficient. The arrangements for closing the port, copied from Donnadieu, are largely fanciful. The fact that the aqueduct modified the northern towers, originally full circles, is not appreciated. Wheeler noted, correctly enough, that the plan of the *Porte des Gaules* by Formigé was wrong. But no one has published the surviving scraps of parapet, north of the *Place Agricola* and in the garden of the *Villa Léonciné*.

The plan of Nîmes is a schoolboy tracing of Blanchet's bad diagram, only equalled by that of Lyon (fig. 84). Grenier rightly draws attention to the *Porte de France*, but the houses are not so close that we cannot see there was no rear court. The grilles at the *Porte d'Eaux* are also worth note, and a parallel for the inclusion of the *Circus* in the Wall is offered by *Aquileia*. The next monument, the *Tourmagne*, is illustrated by a plan of the upper level, derived from *Espérandieu*. But this is inaccurate; for the staircase runs round a square well, taking the place of one of the semicircular earth-chambers; and these in turn are ranged round a central earth-chamber which has an elliptical plan and crowns the huge earth-centred elliptical vault of the lower floor, inaccessible in Roman days. This type of construction and planning is not earlier than Augustus; and since even the upper level is reached only from the additional but similarly built ramp connected with the city-wall, we must assume that this elaborate structure was designed as part of the wall from the first, and served as a great Pharos-like tower, not impossibly inspired from Egypt, with which the foundation of this *colonia* is connected.

At Vienne, Italian analogies for gates set in a re-entrant would have been worth quoting, and a knowledge of them would have prevented any comparison of the Roman *coloniae* in Gaul with *castra*. The wall of Raurica, resembling that of Avenches, can hardly date to the third century. At Autun, the pilaster-caps of *Porte S. André* were not robbed from another building, but were carved on the spot and never finished, while it might have been noted that, as at Aosta, the stone in each storey is different, though without prejudice to their contemporaneity. The plan of Cologne is less regular than is pretended, and the problems less simple. Without accepting outright the dating to Gallienus, favoured in Germany, we cannot accept that to Claudius, now proposed here. For example, the strong resemblance of the *Pfaffenthor* to the west gate of York suggests a second-century date, perhaps after the invasions of 166; and Grenier fails to note

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that the foundations of this gate differ from those of the wall elsewhere. On the other hand, the gate in Martinstrasse, with its analogies in Rome, might well belong to Gallienus. Thus, a complicated history, involving many restorations, as at Strasbourg, will no doubt explain these discrepancies better than an assignation of the whole circuit to any one period. At Avenches, the *Porte de l'Est* is closer to Aquileia, in type and date, than to Megalopolis, and its towers seem demanded from the first, fitting well enough with the Augustan analogies from Italy and the Adriatic.

The fortresses of the Late Empire present an entirely different problem; and Collingwood has recently pointed out the important place in their evolution taken by the Saxon Shore fortresses of Britain, a point quite easily tested by anyone who has the basic treatments of Anthes or Stähelin before him. But no conclusions are drawn about type, and the illustrations used are mostly bad copies of earlier works; for example, the comparison of Kaiser-Augst with Boppard is robbed of its significance by the erroneous plan of the former. On and beyond the Rhine, knowledge grows dim. Altrip is a quadrilateral, not a hexagon, and goes with Kožila in Yugo-Slavia. The analogy for Irgenhausen is Schaan, and, whatever is true in the East, neither fortress is typical of Diocletian in the West. The essential Rhineland type is the round-towered fortress like Andernach, Junkerath and Anse-sur-Saône, and its ramifications are of great interest. Much less common are the curious fortlets of Zurzach, which match Carnarvon and Caer Gybi as good examples of bridge-head or harbour castles. Another tempting Romano-British analogy is that of Horncastle, Caistor-on-the-Wold or Malton, with Cassel on the Belgic coast. Strasbourg raises our hopes, for we reach the town in which the author teaches, and whose walls he might therefore be expected to know. But the description is confused, the plan is ineffective compared with that of Anthes, while the ditches are treated without diagrams and disconnected from their analogies. Yet this is clearly among the most important complex fortifications of the West, comparable with York. We disentangle, as best we may, a first-century wall, with buttresses resembling those of Caerwent, with which should be connected in turn Avenches, Raurica and Aosta (where, *pace* Promis, no extension of the rampart-walk is in question). We long for an illustration of the late-Roman timber-revetted moat, akin to Alzei and preparing us for the stone-built moat of Constantinople. Dijon, thanks to M. Fyot, reaches a higher standard. But

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the treatment of the towns as a whole owes everything to Blanchet, and adds nothing to his interpretation, of which the short-comings are already well known.

Interesting are the less regular fortifications of the countryside. The masonry of *Cora*, près de S. Moré, differs as sharply from that of the Belgic fortresses as Carisbrooke does from the forts of the Saxon Shore. The double foundations of Le Héracle remind us of Cardiff or Scarborough, and need not stand for a change in plan. Why Tournus should be compared with Alzei, rather than Andernach, passes comprehension, and it seems doubtful whether Senon is a fortress at all. Saint Laurent-sur-Othain, on the other hand, is highly interesting, since it is dated to the third quarter of the third century, and is simpler in type than the Saxon Shore forts. Larga is either a fortified villa or a commissariat-depot; and has nothing to do with Jublains, where an earthwork, resembling closely the first Saxon Shore fort at Richborough, was followed by a *burgus*, of a type between Harlach and Schaan; and this in turn was protected, perhaps later still, by a normal fortress-wall. Of two tiny baths, one goes with the earthwork, and one comes after it. Larçay and Rubricaire may belong to the same class, but the description is too scanty, and it must be remembered that Swoboda claimed the former as an *Eckrisaliten-villa*. Interesting also are the late entrenchments, represented by the great enclosure of Bitburg, which might indeed be a park or domain-land. But the earlier defensive earthwork in the same district, of which Tacitus speaks, is omitted (*Tac. Hist.* iv, 37).

In construction, the parapets at Saintes and at Trier may be noted, while the wooden cradling at Strasbourg is in some measure paralleled at Pevensey. But the section on this detailed material falls far short of the possibilities. Nothing whatever is said of gang-work, though Senlis, for example, offers abundant proofs of its presence.

The chapter on gates seeks parallels in Rome, but unhappily; for Aurelian's gates have nothing in common with Aosta, nor was the Castel S. Angelo enclosed by Aurelian in the same way as the Anfiteatro Castrense. The fate of Porte de Mars at Périgueux is equalled only by that of Lincoln's west gate. The gate which masks the decorative Porte S. Marcel at Die is not medieval, but late-Roman, with analogies at Périgueux and Regensburg for decoration, and at Barcelona for type. The descriptions of the monumental gates at Langres, Besançon and Reims are rendered useless for want of plans, and the theme which they inspire, namely, the relation of gates to

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Triumphal Arches, is handled without reference to the early examples, and without historic sense; for the general connexion of Gallic Arches with Caesar, Tiberius and Marcus Aurelius is clear, while that with Hadrian, Severus and Caracalla is not.

The book closes with some general conclusions. These are as weak as might be expected in a survey so wanting in guiding principles. Vaguely and too late, the author begins to discern the presence of such principles in the mass of material which he has presented in so indigestible a form; that military engineers, like Cleodamus and Athenaeus, were behind the schemes; that striking uniformity emerges here and there; that some towns or forts are better built than others. But no attempt is made, even at the last hour, to connect these deductions with type or with history, and sooner or later the book must be re-written from this point of view.

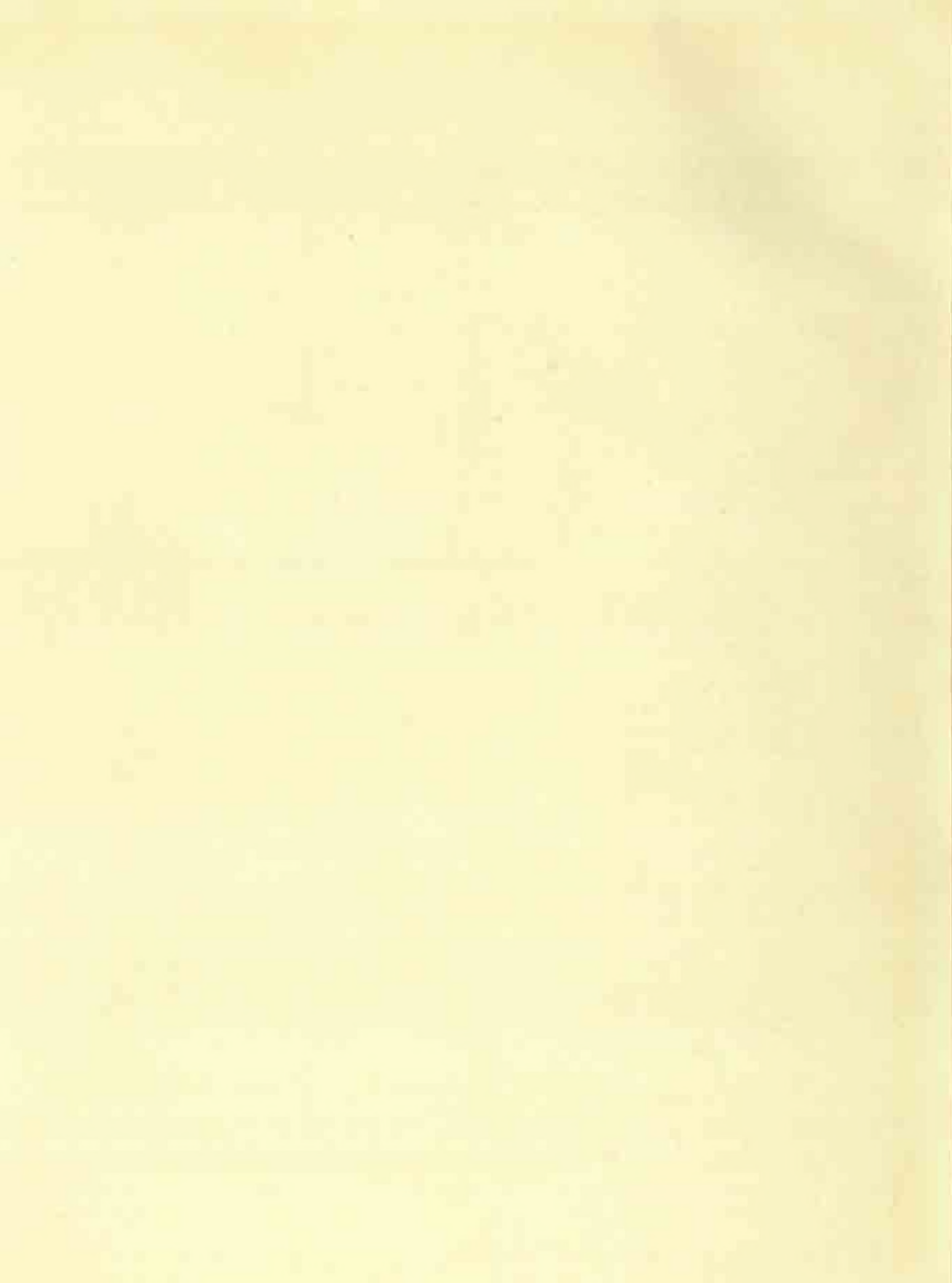


PLATE I



HOUSESTRAHS, NORTUMBURLAND, FROM THE SOUTH
Pk. Gibson and Sen. Hoxham

Ancient Cultivations at Housesteads, Northumberland

by W. PERCY HEDLEY

THE Roman Fort of Borcovicium at Housesteads in Northumberland should need no introduction to anyone interested in archaeology. During the last year it has been brought into great prominence by being presented to the Nation by Mr John Maurice Clayton, and through its close proximity to the portion of Hadrian's Wall recently threatened by quarrying operations.

The fort at Housesteads was one of the earliest to be examined by British antiquaries, but although it has received so much attention its environs have been almost entirely disregarded. On both sides of the Military Way leading out of the west gateway was an extensive civil settlement, and traces of buildings can be seen on the south side of the fort. The hillside sloping to the southward is covered with the remains of early cultivations. These have generally been accepted as of Romano-British age. There are, however, two distinct systems of early cultivation. To the southwest of the fort there is a series of terraces running along the hillside, but on the southeast of the fort there are lynchets running north and south at regular intervals up and down the hillside. From the hill to the south of Housesteads it can be clearly seen that where there is terrace cultivation it has been superimposed on the earlier system of lynchets, and this is also shown in air photographs.

No attempt as yet has been made to differentiate between these types of cultivations at Housesteads, and no date has been suggested for them. There is a third type of cultivation which can be seen on the east side of the fort. This is the ordinary 'rig and furrow' system which was in practice until the middle of last century. From similar cultivation in other parts of Northumberland we can date this to the period 1800-1850. The Napoleonic Wars caused the prices of corn to rise to an enormous figure, thus encouraging cultivation at altitudes which now would be considered impracticable.

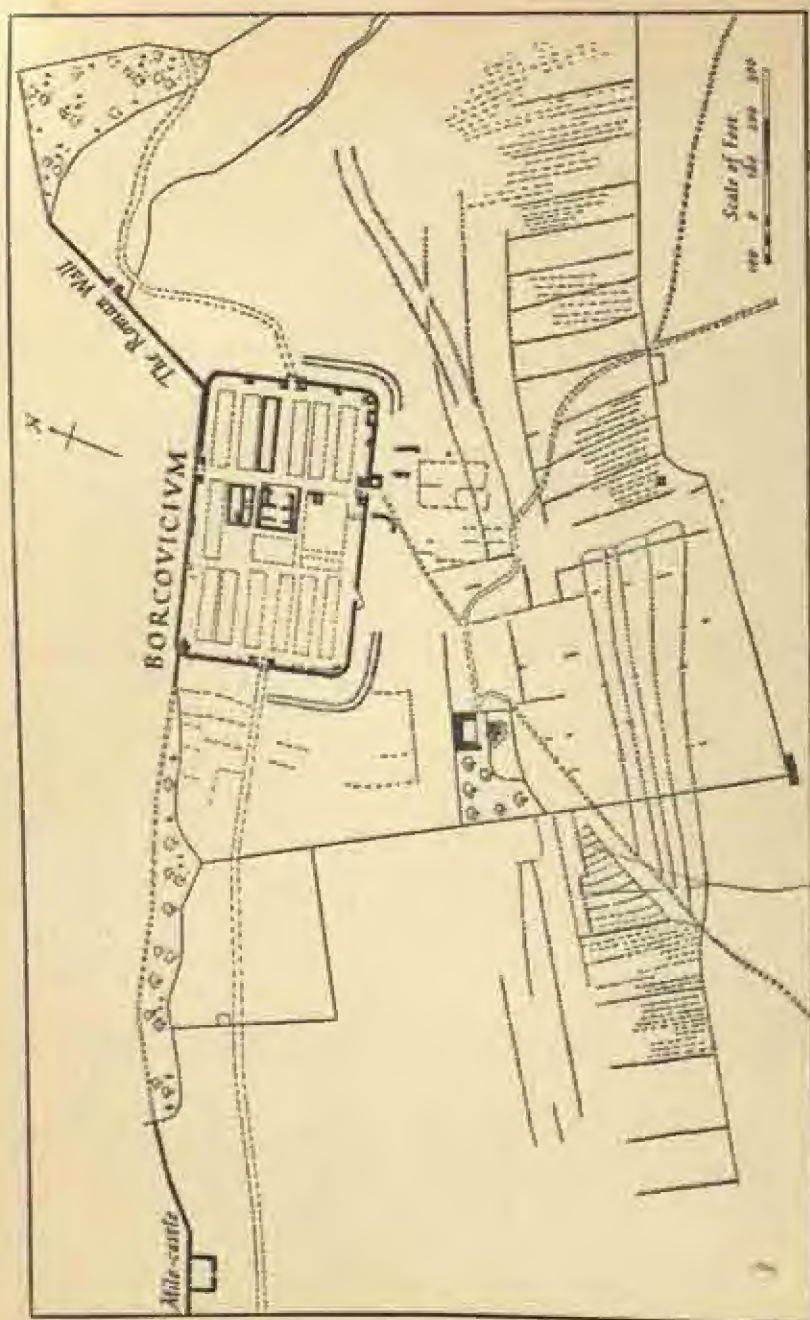


FIG. 1. CULTIVATION TERRACES, HOUSESTEADS, NORTHUMBRIAN.

PLATE II



HOLSENTHAM, HUMBURLAND
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ANCIENT CULTIVATIONS AT HOUSESTEADS

The study of early cultivation has been stimulated in recent years by Air-Survey. It has been shown that there are in the South of England two systems of cultivation, the earlier Celtic, and the later Saxon. It is not intended here to reproduce the arguments brought forward in proof. The continued use of Air-Survey as an aid to Archaeology has shown us that the Celtic system of field cultivation is widely spread over the South of England. Until recently no air-survey work had been carried out in the North. The writer flew along the line of the Roman Wall last year, and examined carefully from the air the lynchets at Housesteads. In October 1930 the Air Ministry gave instructions for a complete aerial survey of the Wall. The north and south lynchets at Housesteads are clearly shown on the air photographs, whilst the terraces are better defined by photographs taken on the ground from the hill to the south. From here it can be clearly seen that where there is terrace cultivation it has been superimposed on the earlier system of up-and-down lynchets. On the steeper slopes between each terrace and spaced at very regular intervals are heaps of stones and boulders, and these heaps occur in almost every case immediately above each other, showing the lines of the original up-and-down lynchets. Moreover the Vallum has been destroyed by the terrace-cultivation (fig. 1). The terrace-cultivation is therefore later than the Vallum and later than the up-and-down lynchets. These lynchets are formed of rough boulders taken off the cultivated strips and in no case is there any trace of true walling.

In the Border districts of Northumberland, a Celtic system of land cultivation persisted down to the 18th century. In Redesdale, which presents practically no trace of Saxon settlement and no common-field system such as prevailed in the lower valleys, a Celtic system of land tenure, similar to gavelkind, was almost universal. In one of the most outlying areas of Redesdale, at Silloans, the early field-system was at right angles to the valley, and the lynchets run up and down the hillside. This is shown on a plan of 1840 now reproduced (fig. 2). If therefore the up-and-down lynchets are found in Celtic districts, where there is little or no trace of Saxon influence, it is reasonable to assume that the lynchets of this type at Housesteads are Romano-British in age.

As already stated the Saxon settlement did not penetrate into the higher valleys of Northumberland. In the South Tyne valley, which is the nearest to Housesteads, there is only one Saxon-ton (Thorn-grafton) in the place-names, and most of the place-names are Celtic

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in character (*e.g.*, Plenmeller, Haltwhistle, Melkridge, Allerwash). There is no certain Saxon settlement within two miles of Housesteads. In the South of England terrace cultivation (strip lynchets) is shown to be Saxon, but we have no evidence of how late these were in use, and up to what date they continued to be made. We cannot imagine Saxon settlers travelling two miles from home in order to grow corn at 800 ft. above sea level, when they had excellent land for the purpose at half this elevation within a few hundred yards of their villages.

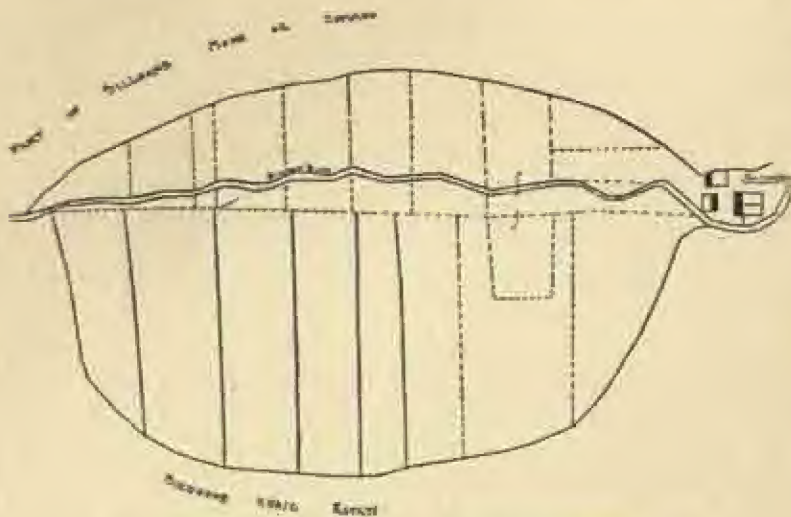


FIG. 2. CULTIVATION-PLOTS AT SILLOANS, NORTHUMBERLAND

The cultivation-terraces at Housesteads, although Saxon in character, can hardly have been made until the 11th century at earliest, and may perhaps be as late as the 15th century.

In conclusion I have to acknowledge my indebtedness to Mr G. H. Askew, F.S.A. SCOT., for considerable assistance in the making of the survey.

Notes and News

A NEW ROMAN ROAD IN SOUTH LINCOLNSHIRE

Mr C. W. PHILLIPS writes :—

The problem of the Roman road system of the parts of Kesteven (southwest Lincolnshire) has long been troubled by the fact that the two main arteries running north and south—the Ermine Street and King Street—have been assumed to join at Lincoln, though this means that they proceed for 17 miles or more converging the whole way from an initial separation of only 5 miles.

The line of Ermine Street from the point where it crosses the Nene at Castor, Northants, to Lincoln has never been in doubt, forming as it does one of the best preserved stretches of Roman road in the country ; but the case of King Street has never been so clear.

This road sets off almost due north from Castor, crossing the Welland at Lolham Bridges, leaving Market Deeping to the east, and running dead straight to the crossing of the Glen at Katesbridge in the parish of Baston. The next three miles to Bourne are not well defined, but the road runs parallel to the Car Dyke, and is never separated from it by much more than a furlong. Passing northwards from Bourne is the ancient trackway known as Mareham Lane, which follows the edge of the rising ground on the verge of the Fen to Sleaford, and crosses the Slea a little to the east of the town by a ford which was in use till the canalization of the river in 1792. Mareham Lane was certainly an important line of communication as long ago as the early Middle Ages, for the ancient fair of Stow Green Hill held on a small common south of the intersection of the Lane with the Salt Way at Threackingham has had a continuous existence since the 11th century. Roman finds have been made along its line at Dunsby, Sempringham, and Threackingham, but they have been fairly plentiful at Sleaford alone. The Lane is probably a Romanized native trackway.

North of Sleaford no satisfactory evidence of Roman use or construction has ever been forthcoming for any of the roads which run through to Lincoln. The direct road from Sleaford to Lincoln

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looks hopeful at first, but it does not conform to the canons of the Roman road, while its nearness to the Ermine Street during the whole of the 17 miles to Lincoln makes its claims still more unlikely. The Roman finds which have been made casually at Washingborough, Potter Hanworth, Nocton, Timberland, Scopwick, and Digby relate far more probably to the Car Dyke than to any road, though it is quite likely that there was a native track connecting these sites and ending at Lincoln.

The solution of the course taken by King Street north of Bourne is that it passes northwestwards through Cawthorpe, Hanthorpe, Stainfield, Lenton, Sapperton, and Heydour to Ancaster, the Roman *CAVSENNAE*.

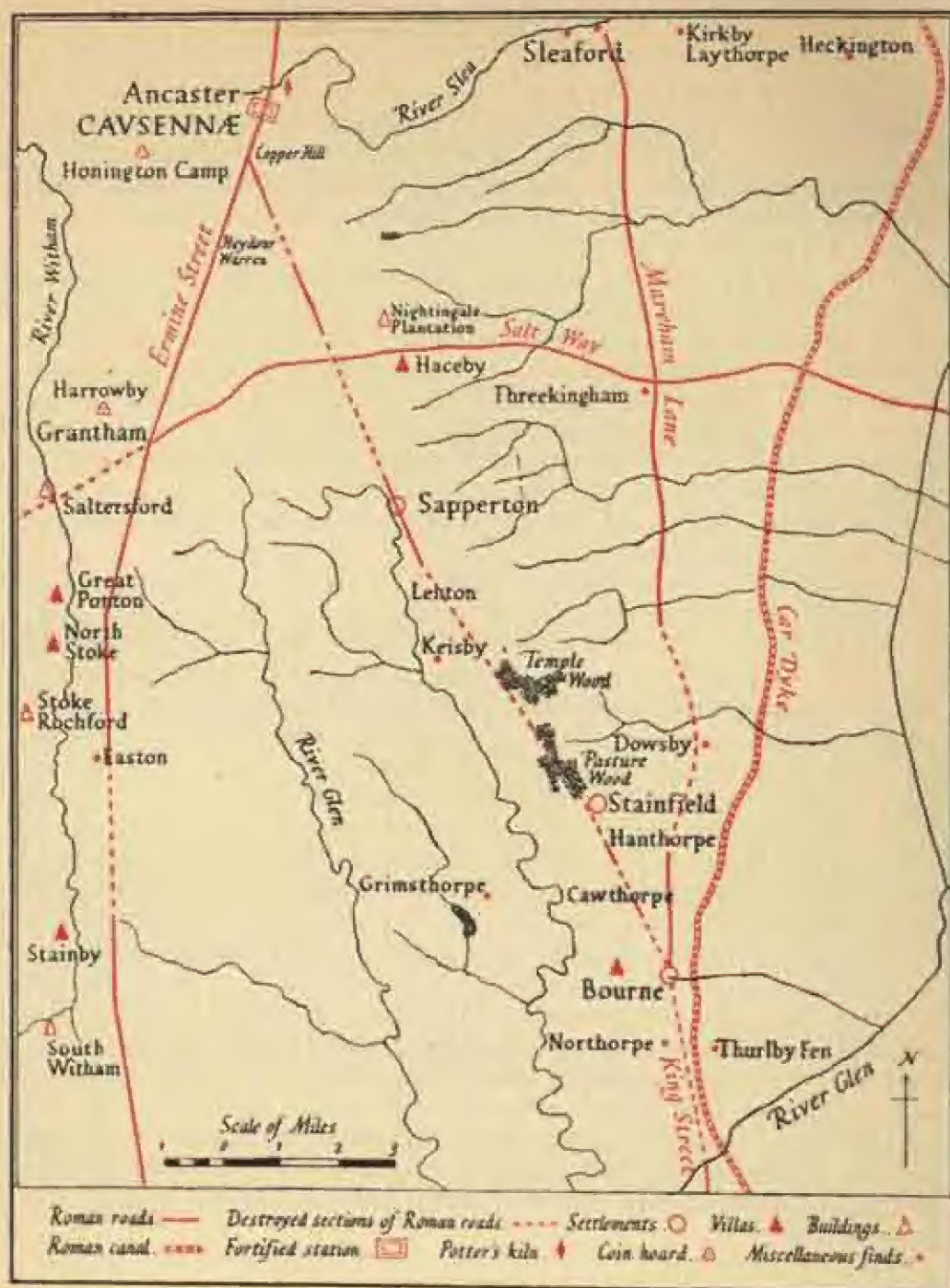
The writer was first led towards this conclusion by the 'considerable number of Roman remains which have been found during the last century at Sapperton and Stainfield, and the remarkable directness of the road which diverges southeastward in their direction from the Ermine Street on Copper Hill, just south of Ancaster. A careful study of the 6-inch Ordnance maps soon revealed the course of the road through a marked alignment of modern roads, parish boundaries, the edges of woodlands, and small disjointed scraps of lane which now serve no useful purpose.

It will be described best by taking the line from Bourne and working northwestwards to Ancaster.

There is little doubt that there was a small Roman settlement at Bourne round the great spring which gives the town its name, and on the sites of the castle and railway station.¹ A tessellated pavement was also found at Park Farm to the west of the town round about the year 1776.

The exact line of the new road out of Bourne cannot be certainly determined on the surface, but it is probably fairly well represented by a line drawn from Bourne railway station to the western boundaries of the orchards on the west side of the village street of Cawthorpe. The short northwest-trending piece of road west of Cawthorpe Hall is a surviving section, but at the fork of Wood Lane the line takes to the fields and is preserved by the short section of the parish boundary of Edenham at the northeast extremity of Fox Wood. The line is almost at once taken up again by Clipseygap Lane and Paddock Lane,

¹Edward Trollope, *Sleaford and the Wapentakes of Flaxwell and Aircardhurn*. London and Sleaford, 1871, p. 36.



TO SHOW COURSE OF THE NEWLY DISCOVERED ROMAN ROAD FROM BOURNE TO ANCATER.

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two otherwise meaningless stretches of green lane to the southwest of Hanthorpe, and it then passes west of Stainfield across Hangman's Lane, and next coincides with the western boundary of the parish of Dunsby, which is also the boundary of Thorny Wood. Just before crossing Hangman's Lane the line skirts on the west side a close called Blackfield, which has been known as the site of a Roman settlement since Stukeley's time. The colour of the field contrasts vigorously with the red soil of the surrounding land, and there are many traces of foundations both here and in the next field to the south. Continuing, the road forms the western boundary of a group of woodlands on the west side of the parishes of Dunsby and Kirkby Underwood, and, clearing Temple Wood, it passes east of Keisby and Lenton, the line being preserved in many places by modern hedgebanks, till it strikes into the line of modern road which runs through the hamlet of Hanby and closely parallel to the western boundary of the parish of Sapperton.

Near the hamlet of Keisby a small piece of Roman votive statuary was found many years ago. It is now preserved in Lenton church. In the southwest part of Sapperton parish the road runs through the site of a considerable Roman settlement which was first revealed in 1824. A manuscript record made by Mr John Cragg of Threethingham gives an account of the discovery of the site which lies 'in a valley on both sides the boundary line by Sapperton', and 'runs up the high ground of Sapperton beyond a spring all over pieces of small brick tesserae of pavements'. I am indebted to Captain Cragg of Threethingham for being allowed to inspect this record. North of Sapperton the road follows the modern lane called Long Hollow and Short Hollow and then crosses the Salt Way about a mile and a quarter west of the site of the Roman villa found by the roadside at Haceby in 1818², and close to Nightingale Plantation where traces of Roman building have also been found. From the Salt Way to Copper Hill above Ancaster, where the road joins the Ermine Street, the line nearly coincides with modern roads most of the way. The chief variation is through the abandoned quarries at Heydour Warren where the present road bends to the east, and the ridge of the Roman road may be seen coming across the ploughland from Quarry Farm to join the line of the modern road where it straightens out for the final run to Copper Hill.

² *Gentleman's Magazine*, 1818, part 1, 634; part 11, 38, 39.



SCULPTURED STONE, ISLE OF MAN

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Thus King Street, instead of extending northwards to Sleaford, runs from Bourne to Ancaster to rejoin the Ermine Street from which it parted at Castor. At no point between Bourne and Ancaster does any impressive agger remain of the kind which makes both Ermine Street and the southern part of King Street so striking, but the few traces which remain at Heydour Warren, Lenton, and Stainfield, coupled with the regularity of the line and the passage through two Romano-British villages make its Roman character undoubted. This does not deprive Mareham Lane of importance, but it makes a continuation from Sleaford to Lincoln very improbable, and strengthens the idea that the Lane is part of a route from the south to the Lincolnshire Wolds which passed from Sleaford, through Anwick, North Kyme, and Billingham, crossing the Witham near the present Tattershall Bridge.

Further investigation will be necessary before anything can be said about the date of this road, but the final destination of King Street may now be considered settled.*

A SCULPTURED STONE FROM MAN

The following note is contributed by the Isle of Man Official Information Department :—

There is no country in the world which is so rich in Runic Monuments as Man Island, but a new find has been made in that land of remarkable archaeological remains. The new discovery is a large humanly-smoothed stone with incised figures of animals which was found at the base of an early Christian burial-mound near Ramsey, recently excavated by Messrs J. R. Bruce and William Cubbon on behalf of the Manx Museum.

The style of the drawings suggests a close similarity with Scandinavian work of the Bronze Age; but the strange thing is that no link with the Northern peoples of so early a date as the Bronze Age has hitherto been recognized in the British Isles.

But how was it that a Pagan monument came into the floor of a Christian grave-mound? It is of interest to note that before laying the stone in position the Christians deliberately hacked off a portion on which were figures, and in order to destroy its magic and its evil properties they Christianized it by carving a cross upon its face.

*The necessary alterations have been made on the Ordnance Survey Map of Roman Britain.—EDITOR.

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The Abbé Breuil and Mr P. M. C. Kermode, the Curator of the Manx Museum, agree that the stone is probably a 'monument of the Early Bronze Age, comparable with certain Scandinavian rock-engravings'.

Messrs Bruce and Cubbon state, in an illustrated report on the excavation, that the 'Cronk yn How Stone', as it is termed, 'is a monument unique in Britain; that its discovery points to the importance of the Isle of Man as a central position in the path of invading peoples at an earlier date than had hitherto been recognized, and throws new light on the relations of the Scandinavian people in the Bronze Age with the British Isles'.

The engraved stone, illustrated opposite, is over 5 feet in length by 10 inches in width. It is in the Manx Museum and has been examined by many archaeologists, who all declare that there is nothing like it in the British Isles. Professor R. A. S. Macalister, the Professor of Celtic Archaeology in the Dublin University, who examined the stone recently, considers it to be of surpassing interest.

PALAEOLITHIC MAN IN IRELAND

Mr SEÁN P. Ó RÍORDÁIN writes:—

Recent excavations conducted in Ireland by the Bristol Spelaeological Society, assisted by the Royal Irish Academy, led to results so important as to justify a further short note on their implications. Since the work is exhaustively reported on in the *Proceedings* of the Bristol Spelaeological Society for 1928 it is not proposed to give more than a brief summary of the conclusions to which the evidence points.

The question of the first arrival of Man in Ireland is one which is even yet admittedly shrouded in darkness. When was Ireland first peopled, and from whence did the first settlers come are questions the answers to which are still to be hoped for. Archaeological research has slowly moved the age of the first peoples back further and the latest discoveries have been epoch-making in succeeding in proving beyond doubt the fact that Ireland had a Palaeolithic population.

For long it was considered that the first settlers in Ireland had already reached the Neolithic stage of culture before settling in that country. The earliest implements—those associated with the 25-ft. Raised Beach of Post-Glacial times—were regarded as Neolithic implements, and their obvious rudeness was explained away by the

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hypothesis that the site on which they were found was a flint-factory and not a dwelling-place, the tools being roughly fashioned there and finished elsewhere. Further discoveries on the Continent, which led to the recognition of the Campignian culture as intermediate between the Palaeolithic and Neolithic, and further study of the Irish 25-ft. Raised Beach implements resulted in placing these early Irish settlers in the Campignian stage of the Mesolithic cultures. During the late Dr Walther Bremer's brief period as Keeper of the Irish Antiquities in the National Museum, Dublin, he drew attention to a collection of flints from Island Magee, co. Antrim, which he recognized as Asturian, a culture which existed in Spain but was contemporary with the Campignian of France and the neighbouring regions.

For the purpose of their investigations the Spelaeological Society selected the South of Ireland, since recent researches had shown that the southern Irish End Moraine of the last glaciation did not cover that area, and hence the likelihood was strongest that traces of Palaeolithic Man would be found there if at all. Several trial 'digs' were first made at other caves near Dungarvan, but finally it was decided to concentrate on the Kilgreany cave and the results proved the wisdom of the choice.

The site excavated lies actually outside the cave as it now exists, but was within it until less than a century ago when the cave itself was quarried back about 15 or 20 feet. It is not necessary to deal here in full with the stratification, since we are concerned only with the evidences afforded by it for the existence of an Irish Palaeolithic period. Suffice it to say that the upper strata showed evidence of the occupation of the cave during the end of the Neolithic period (for a short time), and again during the end of the Bronze Age and the beginning of the Iron Age.

Beneath these deposits, which were found to be disturbed to a greater or less degree, was a stalagmite which presented an unbroken surface throughout, this giving unquestionable evidence of the fact that the underlying remains were in correct stratigraphical relationship. Nothing could have been introduced from above except by digging into the stalagmite, a process which would have been glaringly obvious even if covered by a layer of the latest-formed portion of the stalagmite. This point is important, since it has enabled the excavators to be quite certain that the remains covered by the stalagmite were deposited before the formation of the latter.

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The stalagmite covered human remains of at least three individuals. There was one complete skeleton in a kneeling position with the left side against a projecting portion of the cave-wall; the trunk bent forward over the thighs in a semi-crouched attitude. The skull was in correct anatomical relationship with the cervical vertebrae, which is accounted for by the finding of a large number of stones around the skeleton showing it to be an intentional burial contemporaneous with this hearth ('the Third Hearth'). A temporal bone and two teeth represent at least one other individual, and an upper molar, which does not belong to the skeleton nor to the second individual, gives evidence of a third person.

No implements were found associated with these human remains. This is unfortunate since it compels us to fall back on the evidence afforded by the fauna as a means of dating this occupation. The fauna represented by the animal bones are wild boar, giant deer (Irish elk), reindeer, ox, brown bear, wolf, fox, wild cat, stoat, hare, rabbit, field mouse, field vole, Arctic lemming, bats, birds, and some land mollusca. A study of these dates this occupation of the cave in late Pleistocene times and hence the individuals whose remains have been found may be placed undoubtedly in the Palaeolithic Age. The data are insufficient for a certain dating of the occupation to any particular phase of the Palaeolithic culture, but in his report on the fauna Dr Jackson leans to the probability of the Magdalenian period as the one attained.

In this brief note I have summarized the results of this important excavation, which gives us the first definite proof of the existence of Palaeolithic Man in Ireland. (The collections of 'coliths' reported from near Belfast we may dismiss as freaks of nature). It is merely my intention to call attention to the importance of the work and further information may be obtained from the Spelaeological Society's report. It may not be out of place to remark that the fact that the work was conducted by the Bristol Spelaeological Society points to the great dearth of trained workers in archaeology in Ireland, and to the lack of opportunities for their training. Ireland is admittedly an archaeological province of first-rate importance, yet the number of men who are equipped to study its problems are very few, and though this small number is doing very great work, their efforts must of necessity prove inadequate.

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POTSHERDS FROM THE TRANSJORDAN DESERT

During a recent visit to the Middle East we visited two ancient sites lying in the desert east of Amman (1) the ruined 'fishing-village' of Habeiba, of which an air-photograph was published in *ANTIQUITY* for December 1929, and (2) the 'Kites' near Kasr Azrak. On both sites we found ancient potsherds. There is a strong *a priori* probability that, at any rate at Habeiba, the pottery is contemporary with the remains of walls visible; it is at any rate the only discovery that has been made there, and therefore the only clue, if such it is, to the age of the ruins. We therefore submitted the potsherds to Miss Agnes Conway and Mr G. Horsfield, whose knowledge of kindred wares in that region is great; and we print below Mr Horsfield's report. The sherds are all now in the Archaeological Museum at Cambridge.

HABEIBA

EARLY IRON AGE. A small collection of sherds painted in red on a buff ground. The fragments of pattern are all in straight, hard stripes, and the fabric is smooth, thick and well made. In type of ware and decoration there is a general resemblance to the Philistine painted pottery found at Ophel, Gezer, etc. Some fragments of the same general type, though far from identical, were found at Petra, on the surface, and in the lowest level of the rubbish dumps; c. 350-150 B.C. These from Petra are closer to the Philistine than the Habeiba pottery.

HELLENISTIC. Small sherds with no shape. Buff ware.

ROMAN. A few pieces of handles, and some larger sherds of dark grey ware, ribbed in low relief, and of fine manufacture.

UNKNOWN. One large sherd painted with regular black stripes on grey ground, so regular as to look mechanical.

AZRAK

Five small Hellenistic fragments like those from Habeiba.

ROMAN. Bits of handles and small sherds similar to Habeiba.

Five small pieces of clear, bottle-green glass, one ribbed.

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MUMMY WHEAT

The following very interesting letter by Sir E. A. WALLIS BUDGE on popular belief in the germinating properties of ancient Egyptian wheat, which was published in *The Times* of 23 April last, is reprinted here by permission of the EDITOR of that journal, and of the writer.

' Three gentlemen connected with the Press have rung me up and told me that they had received a report from America that a distinguished farmer had succeeded in making to grow wheat which he had obtained from the tomb of Tutānkhamen. And they asked me if I believed that such a thing was credible.

' During my years of service as Keeper of Egyptian Antiquities in the British Museum I was asked this question, either by letter or by word of mouth, on an average twice or thrice a week, and the Director received many letters asking the same question. Dr Birch had said: "Ancient Egyptian wheat will not grow", and we gave that as an answer to inquiries. Subsequently good fortune gave me the opportunity of buying, in 1897, at my own cost, in Western Thebes, a good specimen of a wooden model of an ancient Egyptian granary, which had just been found in a tomb of the Nineteenth Dynasty, say 1200 B.C. It contained little bins and the usual staircase, and the whole space not occupied by the bins was covered with a layer of darkish brown grain, wheat or barley (I know not which), several inches deep. I poured out the grain into a leather bag and brought it home in due course.

' I suggested to the Director that we should give some of the grain to the authorities at Kew Gardens and ask them to make careful experiments and let us know the result. With his approval I wrote to Dr Thiselton Dyer, the Curator, and asked his help, and he promised to give the planting of the grain his personal care and attention. He prepared soil and divided the grain into four little heaps, and he planted each heap separately, and covered each little plot with glass of a different colour—white, yellow, red, and blue. The whole of the Kew staff was intensely interested in the experiment, and many botanists joined them in waiting for the grain to germinate. They waited day after day, week after week, but no shoot of any kind appeared. At length, after three months, they turned over the little plots and found that all the grain had turned to dust. As a result Thiselton Dyer reported that ancient Egyptian wheat or barley would not grow, and then went on to talk about the shortness of the life of

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the germinating properties in grain generally. Many others tried the same experiment, with the same result.

'As we shall have all the old stories and statements brought up again in the Press generally, I would fain ask you to put on record in *The Times* the above short account of Thiselton Dyer's exhaustive experiment. When I resigned in 1924 I handed over the grain and some rolls of mummy wrappings—all my personal property—to an official of the department, who still has them.

'Now there is a reason why the belief that ancient Egyptian wheat will grow is so widespread. For hundreds of years the natives have used the halls of tombs as granaries for the wheat and barley which they obtain from Syria. I have known ancient coffins to be packed in this Syrian grain and sent to England, and such grain will, of course, grow. And during the last 30 years the native dragomans and guides have found that tourists will buy "mummy wheat", and they keep supplies in the tombs, carefully hidden, which they dig up under the eyes of the astonished visitor and offer him as *hunta mūmiya*, "mummy wheat", or *sh'eir mūmiya*, "mummy barley". I cannot help thinking that if there had been ancient Egyptian wheat in the tomb of Tutānkhamen we should have heard of it before'.

HALLSTATT

The name of Hallstatt is known to all students of prehistoric archaeology because it is used to describe the earliest Iron Age period of Central and Northwestern Europe. The place itself, however, is much less well known. It lies on the shore of a small but very beautiful lake in Upper Austria, and consists of a small village built mainly on the delta of a mountain torrent. Immediately behind the village rises a precipitous cliff, up which a zig-zag path has been constructed. The visitor who wishes to see the actual site of the famous cemetery ascends by this path to a height of about 1200 feet above the lake to a building called Rudolf's Tower, where he may obtain a magnificent view from a small wooden outlook-hut specially built for this purpose. A few yards further on is the site of the cemetery, with a notice-board recording the fact. It is situated on the steep southern slope of the torrent-valley, where the surface is disturbed by a number of old pits. A more unlikely place for an important archaeological site could hardly be imagined. It is most inaccessible, but yet it has no natural advantages. There is nothing to indicate where the settlement to which

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the cemetery belonged was situated, nor is there any obvious place for such. The contents of the graves indicated that the inhabitants were prosperous and wealthy and that they derived some of their possessions (such as amber) from a distance. The only natural wealth of the place is salt—an indispensable commodity in primitive days, when meat had to be preserved against times of scarcity. Salt is still worked in the immediate vicinity of the cemetery, and the adits to the mines can be seen beside the path that leads up to the village of Salzberg. The district has the name of Salzkammergut, a former royal demesne meaning 'Salt-exchequer-district'.

There is a small museum in the village which contains many interesting 'folk-antiques' and a few objects from the cemetery. The bulk of these however are in the Museum at Vienna. (There are a few at Linz).

Hallstatt is a popular resort of Austrian tourists and hikers in July and August, when the weather is hot and fine, though heavy thunderstorms are not infrequent. There are many interesting excursions in the neighbourhood, a glacier-garden, an ice-cave and such like; and the lake is well adapted for boating and bathing. Hallstatt can be reached by train from Vienna via Linz and Bad Ischl, which is a pleasant little spa reminding one of Tunbridge Wells in the Victorian period. Hallstatt railway-station lies on the eastern shore of the lake, which here is about three quarters of a mile wide. A tiny steamer called *Rudolf* meets all trains and lands one right at a convenient hotel on the opposite side. There are many worse places to spend a few days' holiday for those who like to wander a little off the beaten track.

An admirable description of the Hallstatt cemetery* has been published by Dr Adolf Mahr, formerly director of the National Museum at Vienna and now keeper of the National Museum at Dublin.

EXCAVATIONS IN NUBIA

Professor F. LL. GRIFFITH sends us the following report:—

The Oxford Expedition to Nubia was first planned in 1910, as the outcome of the interest aroused by the discoveries of Dr Randall-MacIver and[†]Professor J. Garstang. The monuments of Nubia and the Sudan demanded investigation through the various periods of the

* *Das vorgeschichtliche Hallstatt, zugleich Führer durch die Hallstatt-sammlung des Naturhistorischen Museums in Wien.* Vienna, 1925.

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Protodynastic colonies of Egypt, the C-group and Kerma cultures, the suppression of native culture under the New Empire, the conquest of Egypt by the Sudan, the Meroitic civilization and writing, and the later years of Nubian christianity. Our early researches at Faras near the Second Cataract and Sanam opposite Napata in 1910-1913 were reported in the *Liverpool Annals of Archaeology and Anthropology*, vols. VIII-XV. The war put a stop to our activities but Dr G.A. Reisner took over the Napata concession on behalf of Harvard University and made many brilliant discoveries.

In 1929-30 at the suggestion of Mr A. B. B. Howell, then Governor of Dongola Province, and after a ten days' exploratory dig we decided to examine the temple remains at Kawa; the Oxford Expedition was resuscitated, and the most interesting excavation in all my experience began in November 1930.

The result of a little over three months' work has been the complete clearance of three temples from under twelve to fourteen feet of rubbish. A great deal of violent defacement and burning had taken place. It seems to me likely that the destruction was the result of the punitive expedition of Petronius and his troops after Candace's great raid on the Roman defences about the First Cataract. The fury of the Romans against the Ethiopians at Kawa would have been raised to its highest pitch, if, as we suspect, Candace herself resided there while her son, according to Strabo, was in Napata. The fields and gardens which surrounded the city described by Tirhakah in one of the inscriptions are now a bare and sandy waste.

There seems to have been an early occupation of the site by Egyptian colonists of the Middle or possibly even of the Old Kingdom. This colony was lost in the Hyksos and other troubles and the Empire-builders of the New Kingdom had to begin afresh. Probably Amenophis III re-founded Kawa, assigning it to his imperial god Amun of Karnak, and giving it the suggestive name Gem-Aten or Gem-p-Aten—'The Aten Sun-disk is realised' (?). His son, the monotheist heretic Akhenaten, destroyed the temple of the hated Amun, but Tutankhamun rebuilt it on a smaller scale. Rameses II re-cut the cartouches to a semblance of his own, and Rameses VI ringed the fluted columns with cartouches and with a figure of a high official in adoration. After a blank of 500 years the Ethiopian Dynasty of Napata ruled Egypt for 50 years. This was the period of Kawa's greatest prosperity. Shabako built a column in one temple, Tirhakah added stone doorways to the mud brick walls of another and built a great temple

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at right angles to these twin temples. Granite rams were erected before the first and second pylons, and five granite stelae recorded his building and benefactions. Some generations later Aneramen added a sixth stela. Finally Meroitic cartouches of the family of Candace were placed in the First Court and Candace herself dedicated a shrine. Then came Petronius and the destruction of the city: a few inhabitants only can have continued perhaps to the third century. A large house of the age of Candace, with stone porch at the east end of the Great Temple, yielded a Hellenistic bronze figure, an ivory statuette of a girl, and remarkable objects of a more Nilotic type.

Our chief finds were:—in the First Court, besides the granite rams and stelae, miscellaneous blocks, one with an excellent representation of a horse (with sun-helmet) and rider, and two with Meroitic cartouches of Akinerar, the son of Candace, and of Amanishakhate, a somewhat earlier queen whose jewellery is now amongst the treasures of Munich and Berlin (up till now the only examples of Meroitic hieroglyphs in Europe have been two or three in the Berlin Museum). In the Second Court the remains from a huge bonfire of temple furniture, consisting of many fine and rare bronze figures of deities, a steatite baboon, bronze fittings, fayence inlays, together with prehistoric stone implements from the temple treasury. In the Southeast Court a perfect sphinx, a headless statue and two worshipping baboons all of granite and all inscribed by Tirhakah. Among smaller objects are a very fine aryballos of blue fayence and a tiny gold figure of the most delicate workmanship of a king (xviii dynasty) kneeling and offering wine, and a quantity of fayence inlays, cartouche plaques of Ethiopian kings, etc.

The great wooden doors had been largely plated and studded with bronze: the most interesting relic from them is a pivot-sheath inscribed with a dedication by the king to Ammon of Gem-p-aten.

Of the objects found, the Sudan Government takes half but we were allowed to bring away all the smaller objects for study, exhibition and repair. Our share will be divided chiefly between the British Museum, the Ashmolean and the Ny Carlsberg Glyptothek, Copenhagen.

A full report on the *Kawa Temples* will in due course be prepared for separate publication.

It is hoped in 1932-3 to complete the exploration of Kawa by excavating in the town remains and cemeteries, and also to make trials on other important sites for pagan and Christian remains.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

A skeleton has been found under 14 feet of peat at Stony Island, co. Cork. Here is a chance for someone to zone that particular peat-bed by pollen-analysis (or otherwise) and find out to which of the (pluvial or other) periods it belongs. (*Cork Examiner*, 25 April).



A large number of bronze objects recently found in Western Persia have been acquired by various European museums. They belong to a culture which is otherwise unknown, though there are obvious resemblances to the cultures of adjacent regions. A date in the first millennium B.C. is suggested. Those interested will find further details in the *Zeitschrift für Orientforschung*, band VI, heft 6, pp. 320-22 (a peculiarly interesting number of this valuable journal) and in the *Bulletin des Museaux royaux d'art et d'histoire* [Brussels] ser. 3, nos. 2 and 3 (March and May 1931).



Dr Speiser, whose new book on 'Mesopotamian origins' will shortly be reviewed in *ANTIQUITY*, has been conducting excavations at Tell Billa near Mosul, on behalf of the University of Pennsylvania Museum. He has found remains dating from the earliest period ('Susian' egg-shell ware) down to historic times. (*Art and Archaeology*, May 1931, xxxi, 283-4).



Professor J. L. Myres has received a cablegram announcing an important archaeological discovery by Miss Dorothy Garrod, who is excavating caves at Athlit, in Palestine, on behalf of the British School of Archaeology in Jerusalem. Miss Garrod reports that her colleague, Mr MacCown, has found a child's skull in a layer of breccia of Mousterian age in one of these caves.

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In the cave known as Mugharet el Wad mesolithic burials with head-dresses and shells have been found in place. These new finds are an important additional contribution to the series of discoveries which have been made in these caves during the past two years. (*The Times*, 1 June).



After reading the article on Grim's ditch in our last number, one of our readers in the R.A.F. went up and flew over the course described near Berkhamsted. He found what appears to be a continuation of it eastwards, beyond Berkhamsted Common, and kindly flew the Editor over the newly discovered portions. Before expressing a final opinion it will be necessary to examine the remains on the ground, when the crops have been cut.



A report by Mr H. C. H. Carpenter, of the Royal School of Mines, on an Egyptian axe-head (c. 1800 B.C.) published in *Nature*, 18 April, p. 589, contains interesting data as to its casting (it was not forged), hardness, and chemical analysis, as well as the result of an experiment to reproduce the axe-head.



An account of the excavations on the site of Paestum, directed by Professor Maiuri for the recently formed 'Society for Magna Grecia', assisted by Professor Marzullo of the Salerno Museum, is printed in *The Times*, 22 April, p. 13. A note is added of work being done at Velia (the Greek colony of Elea), 25 miles south of Paestum, where it is proposed to excavate the entire circuit of the old city walls, an undertaking of vast extent.



The Archaeological Survey of Nubia has issued a report on the Middle Kingdom fortress of Kubban, on the east bank of the Nile, opposite Dakka. (*The Times*, 22 April, p. 13).



A Minoan 'holy sepulchre' ('Temple-tomb of the Priest-Kings'), with walls over 15 feet thick, built into the hillside south of the palace of Knossos has been found by Sir Arthur Evans, who dates it to the first quarter of the 16th century B.C. Reports have been communicated by Sir Arthur to *The Times*, 28 April (p. 15), 16 May (p. 13), 13 July (p. 13), and 27 July (p. 13).

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Portions of a 7th-8th century cross embedded in the walls of Easby church near Richmond, Yorks, have been purchased by the Victoria and Albert Museum, where there is already another part of the cross. Attention was directed to the extraordinary interest of the cross by Sir Charles Peers in his presidential address to the Society of Antiquaries last April. (*The Antiquaries Journal*, July 1931). A description of the carvings was printed in *The Times*, 30 April, p. 12.



Funds provided by the Egyptian Department of Antiquities have enabled considerable progress to be made in excavating at Inciba, under the direction of Professor G. Sterndorff of Leipzig. A large number of decorated vases, beads, and articles of jewelry have been found. The excavation of the sacred city of Hermopolis has been undertaken by the Egyptian University's Expedition under Dr Sami Gabra. (*The Times*, 20 May, p. 13).



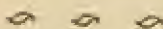
The results of the season's work at Richborough are summarized in *The Times*, 1 May, p. 11. A permanent museum has been built on the site by H.M. Office of Works.



The principal features of the site of Tell el Ajjul, Gaza, are described by Sir Flinders Petrie in a letter to *The Times*, 19 May, p. 12.



The Indian Archaeological Department reports that remains of 'Indus Valley civilization' have been found near Ambala (Punjab) similar to those at Harappa and Mohenjo Daro. (*The Times*, 19 May, p. 15).



Temples of the Third Egyptian Dynasty at Sakkara, near Cairo, are described and illustrated in *The Times*, 19 May, pp. 15 and 20.



Sir Aurel Stein has abandoned his expedition to Chinese Turkestan mainly on account of the difficulties raised by the Chinese authorities, to which reference was made in the June number of *ANTIQUITY*. (*The Times*, 25 May, p. 9). In *The Times* of 16 July (p. 13) Sir Aurel gives a detailed statement of the incidents which led to his decision.

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An account of the last exhibits removed from the tomb of Tutankhamen and now prepared for the Cairo Museum is given in *The Times*, 27 May, p. 11.

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The season's work at Armenochori in Macedonia by the British School at Athens has resulted in a quantity of vases of Early Macedonian Bronze Age culture being found. The vases have two highly-swung ribbon handles which became the common form in later periods. (*The Times*, 27 May, p. 11).

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Excavations at Giza Pyramids have been continued by the Harvard-Boston Expedition and the clearing of the cemetery of the Cheops family completed. (*The Times*, 16 June, p. 13).

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A summary of the results of the excavations at Perachora, on the Gulf of Corinth, is published in *The Times*, 17 June, p. 10. A large deposit of decorated bronze vases, dated as 7th-6th century B.C., was discovered, as well as a fine bronze oinochoe, and two skyphoi, the first metal examples of the shape ever found in Greece. There were also ivory seals and fibulae, a most important find, as ivory has not been met with before in Corinth.

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An interesting inscription has been found on the island of Uronarti on the Nile, about 30 miles above Wady Halfa, by the Harvard Archaeological Expedition under the direction of Dr Reisner. It is cut on a granite block of the quay of a fort built by Pharaoh Sesostri III and records that he took part in the pacification of the country in the 16th year of his reign. (*The Times*, 20 June, p. 11).

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The Roman fortress of Caerleon is now transferred to the Office of Works as a national monument. (*The Times*, 23 June, p. 5).

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The East African Archaeological Expedition has left England to revisit the Oldoway bone beds in Tanganyika Territory, where Professor Reck in 1913 discovered the fossilized skeleton of a human being. Mr L. S. B. Leakey has joined the Expedition and besides seeing the Oldoway beds hopes to carry out work at the northeast end of the Victoria Nyanza basin, where fossil beds have been known for some time. (*The Times*, 25 June, p. 20).

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It is believed that the site of the Academy of Plato near Athens is known as the result of excavations made under the direction of the National Museum of Athens. The walls of a large building, considered to be the college and gymnasium of the Academy, have been found. (*The Times*, 18 June; *Illustrated London News*, 27 June; *Manchester Guardian*, 26 June).

A report on the work of the British Museum Expedition to Nineveh under the direction of Dr R. Campbell Thompson was published in the *Birmingham Post*, 26 June. The results include finding the site of the Temple of Ishtar. Illustrations were published in *Illustrated London News*, 27 June.

A coloured illustration of the remarkable inscribed 10th century icon, the first of its kind, found in the ruined church of St. Mary Panachrantos at Constantinople was published in *Illustrated London News*, 27 June. It presents a wholly new example of Byzantine art.

The Public Prosecutor at Cusset states that no further proceedings will be taken against M. Emile Fradin in connexion with the Glozel *affaire* on the ground that evidence is lacking that M. Fradin has profited, or attempted to profit, by the discoveries which he announced. (*The Times*, 29 June).

The finds of the British Museum Expedition in Middle Egypt include an Amratian (early predynastic) bowl of red-painted ware, a fine collection of beads, an alabaster headrest, and some children's shoes of the Christian Coptic period A.D. 300-500. (*The Times*, 3 July, p. 11).

Among the exhibits arranged at University College, London, to illustrate the work of Sir Flinders Petrie's British School of Egypt at Tell el Ajjul near Gaza, a settlement of the Hyksos dynasty, was the skeleton of a horse buried on the site, with three legs cut off before interment. It was found in a pit with human burials. (*The Times*, 6 July).

A barrow at Longdown, near Colbury, in the New Forest, has been opened by Mr J. P. Preston. There were 37 human interments, 26 in urns of the Deverel-Rimbury type. (*The Times*, 18 July, p. 10).

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. Books are occasionally included.

Recherches sur les ossements mésolithiques de Mugem, by Henri V. Vallois, Professor of Anatomy, Toulouse. *L'Anthropologie*, 1930, XL, 337-389.

An important article.

Slovenské Hradiska z doby Hallstattskej (Slovak oppida of the Hallstatt period). *Sborník Muzealnej Slovenskej spoločnosti*, 1929, XXIII, 32 pages, 12 plates. French summary.

Reviewed in *L'Anthropologie*, 1931, XLI, 177-8. Contoured plans of hill-forts.

News items from Jerusalem, by Chester C. McCown, Director of the American School of Oriental Research in Jerusalem. *Amer. Journ. of Arch.*, 1931, XXXV, 93-107.

A very full account of archaeological field-work in Palestine and Transjordan in 1930, including the interesting neolithic or Early Bronze Age sites called Teleilat el Ghassul in the Jordan Valley.

Anthropology: old and new, by Professor Sir Arthur Keith. [Beddoe Memorial Lecture, delivered at Bristol, 5 September 1930]. Publication not specified, but printed in *Journal Bristol and Medico-Chirurgical Society*, XLVII, Winter 1930.

This is a fine tribute to the memory of a great anthropologist whom Sir Arthur calls 'the founder of modern physical anthropology', the author of 'the greatest treasury of anthropological fact which has ever appeared in any language'. But it is more than this; for it narrates—though necessarily in briefest outline—some of the main facts of his life, and some of the more important conclusions to which he came; and concludes with an appeal for the foundation of a Chair of Physical Anthropology at Bristol University.

Les Origines de l'Iconographie irlandaise, by Françoise Henry. *Revue Archéologique*, 1930, XXXII, 89-115.

The Dorsey: some notes on the large entrenchment in the Townland of Dorsey in the south of the county of Armagh [Ireland], by Henry G. Tempest. *County Louth Arch. Journ.* Dec. 1930, VII, 187-240.

A full account of an interesting earthwork illustrated by air-photographs, one of which was published in ANTIQUITY, December 1930.

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Untersuchungen über Zeit und Stil der ' chetitischen ' Reliefs, by Fr. W. Freiherr von Bissing. *Archiv für Orientforschung*, 1931, vi, 159-201.

Stone Axes found in the Isle of Wight, part 2, by Hubert F. Poole. *Proc. I. of Wight Nat. Hist. and Arch. Soc.*, 1930, II, 27-38 (4 plates).

These notes are a continuation of Mr Poole's studies, and deal with chipped celts, polished celts, rechipped implements, axes of material other than flint, and perforated axes. The interesting fact is brought out that polished axes are almost entirely confined to the southern (cretaceous) portion of the island. The paper is admirably put together and the drawings are a model of what such should be.

Station chelléenne de la carrière Martin, près El Hank [Maroc], by M. Antoine. *Bull. de la Soc. de Préh. du Maroc*, 1930, 4th year, 59-117.

Comechingon Pottery. (Reprinted from Proceedings of the Twenty-third International Congress of Americanists, September 1928). By G. A. Gardner. U.S.A., 1931, pp. 35, (price not stated).

An authoritative and voluminously-documented paper on the ceramics of the Comechingon peoples of Cordoba which may be taken as a model of how to deal exhaustively with an unimportant subject. Establishes the Peruvian-influenced character of the Central Argentine cultures. J. L. MITCHELL.

The Ancient Mimbrenos : based on investigations of the Mattocks Ruin, Mimbres Valley, New Mexico, by Paul H. Nesbitt. The Logan Museum, Beloit College, Wisconsin, U.S.A. *Dollars* 1.50.

The record of the expedition of the Logan Museum and an account of painstaking research and excavation among the ruins of this branch of the Northern Pueblo culture. In general the expedition confirmed the comparative cultural unimportance of the Mimbrenos. The ceramic finds figured have, however, considerable interest. J. L. MITCHELL.

The Museum Journal. Vol. XXI, nos 3-4. September-December 1930. Published by the Museum of the University of Pennsylvania, Philadelphia. pp. 93. (Price not stated).

Contains three papers—one on the excavation of an Indian mound at Beech Bottom, West Virginia, one describing Mr Edgar B. Howard's researches in the Basket Makers' caves of the Guadalupe Mountains (and re-affirming for those Basket-Makers Dr Kidder's astounding chronology of 2000-1500 B.C.), and one which seeks to outline the Tlingit concept of the after-life in the myth of ' How Ats-Ha followed the Hide of his Comrade to Yek Land '. This last paper, by Mr Louis Shotridge, is illuminating and important. J. L. MITCHELL.

Reviews

ATHLETICS OF THE ANCIENT WORLD. By E. NORMAN GARDINER. *The Clarendon Press, Oxford, 1930. pp. x, 246 and 216 illustrations. 28s.*

This book is one of a series of works, of which it may be regarded as the culmination. In 1903 Dr Gardiner read before the Hellenic Society a paper on that well-known *crux* the pentathlon. It was followed by a series of papers in the *Journal of Hellenic Studies* in which every side of Greek athletics was treated with extraordinary thoroughness. No one had a more complete equipment for the investigation than Dr Gardiner, combining as he does good scholarship and a thoroughly practical knowledge of modern athletics. His patience and goodness of judgment are unsurpassed. In 1910 was published his *Greek Athletic Sports and Festivals*, which at once placed him at the head of all writers on the subject.

The new book is not a new edition of the last-mentioned work, but is on a somewhat different plan. The scope is extended to include the ancient East on the one side, and Roman sports on the other, although the former of these subjects occupies only 14 pages, and the latter 12. The text is much reduced in length, the number of illustrations slightly increased. The author has omitted matter of historical interest, and has striven after greater simplicity. He has added a chapter on ancient ball-play, and omitted one on chariot-racing. The illustrations include some representing modern athletes and athletics, but are in the main the same as before, though the recent minute intensive work on Greek vases, which are the source of most of them, has enabled him to attain to more exactness as to date and style.

Anyone who has followed Dr Gardiner's labours during the last thirty years will be disposed to prefer the book of 1910. It is said to be out of print; but surely it is possible to reprint it. Dr Gardiner is not a diffuse writer; and his abridgement is largely gained by the omission of a number of discussions of questions which interest the scholar and the athlete. In the new book he gives his final opinions, and does not show how they were reached. But in archaeology, as in philosophy, the old rule prevails that the search for truth is more satisfying than the possession of truth. The author's phrase 'Much matter of purely historical or archaeological interest has been omitted' is unfortunate, when the whole book consists of archaeological matter, and its great value is historic. The new book is also more expensive than the old. I cannot refrain from a regret that both the University Presses now publish classical books at a price which puts them out of reach of all but the wealthy. M. Reinach's excellent example, in producing for five francs most elaborate works on Greek art, is not followed in England.

However, I must not spend my brief space in regrets. It is a delight to read the work of a man so completely master of his subject and so full of a fresh enthusiasm as Dr Gardiner. His recent death is a blow to all lovers of the Classics, especially to his Oxford colleagues, to whom his extreme kindness and his readiness to help had greatly endeared him.

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Besides its exact and scientific account of ancient sports, there is, in Dr Gardiner's book, a healthy and breezy modernity. He compares modern with ancient facts, and often relentlessly throws aside the statements of ancient writers. He realizes how much these are dominated by the great curse of Greek literature, rhetorical prepossessions. He brings everything to the test of fact and possibility. And one of the most satisfactory of his cautions is his insistence on the degree to which professionalism and even specialism are ruinous to the spirit of sport. He shows how this cause brought about the degradation of the great games in later Greece, and hints that we have begun, especially under American influence, to travel on the same path. Manly competition had been the secret of Greek sport, in which every young man was expected to take a share. In Hellenistic and Roman times, the games degenerated into the performances of a few overtrained acrobats, while the great majority merely stood by and looked on. In sports of that kind, however many records may be broken, there is no real value. P. GARDNER.

THE ROSETTA STONE IN THE BRITISH MUSEUM. By SIR E. A. WALLIS BUDGE. *Religious Tract Society*, 1929. pp. 325 and 22 plates. 12s 6d.

In the decrees of Memphis and Canopus published so long ago as 1904 Sir E. A. Wallis Budge told us the romantic stories of the discovery and decipherment of the Rosetta Stone, and gave us a full account of its triple inscription with translations. Knowledge of the demotic, and still more of the hieroglyphic, writings, has grown greatly in the interval and allows much more accurate translation than was then possible. That earlier account, too, must now be difficult to procure.

While the finding of the Stone and its subsequent history is a tale of no little interest, the decipherment of the hieroglyphic text thereon is one of those fascinating stories that prove that truth is indeed stranger than fiction. It may rank with that other remarkable achievement, the discovery of Uranus, which it resembles in that both a Frenchman, and an Englishman, had a share in the conquest; though in this case the main honour belongs to France.

The book contains, with one exception, the full texts and translations, intended doubtless to serve as the complete text-book for the student, yet it is marred by errors which should not have passed the proof reader. Major-General Turner and the Rev. Stephen Weston are each referred to under two names. The former appears both as Turner and Taylor though only indexed (wrongly) as Taylor, while the latter is divided into Weston and Watson and appears doubly in the index. The fact that General Turner was Colonel at the outset is no excuse as he is also given as Major-General. This error was not in the account of 1904.

Then, too, the omission of the demotic text (of which, as of the hieroglyphic, a transliteration and translation are given) is a defect in completeness; if lack of space was the reason, some of the interesting, but not wholly relevant, plates of Egyptian temples might have been sacrificed.

This omission is emphasized by the substitution of a very small and illegible plate of the stone as a whole for the much larger reproduction given in 1904 in which the texts could be read. Further, we should have liked to have heard more of the decipherment of the demotic. Finally, the paper used is not of the best. Yet everyone who has the least interest in Egypt, or in a painstaking victory for human genius, should read this book.

G. S. C. COOKE.

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ÉCOLE FRANÇAISE D'ATHÈNES. ÉTUDES CRÉTOISES, I. MALLIA.

Premier Rapport 1922-24. By F. CHAPOUTHIER and J. CHARBONNEAUX. Paris: Geuthner. pp. ii, 66 and 36 plates. 100 francs.

On an old map of Crete the site of the Minoan palace at Mallia, which lies on the north coast of the island a long day's journey on foot to the east of Knossos, is marked as containing 'extensive Hellenic ruins'. Dr Chatzidakis, the veteran explorer of his native island, first began work here in 1915 and the excavations since 1921 have been continued by the French School at Athens, which in the present volume publishes the first report on the general results obtained between 1922 and 1924. The palace, which in size and structure ranks with those of Knossos and Phaestus, apparently consisted of a central court with great ranges of buildings erected around it. The style of the architecture in its use of ashlar work and the provision of frequent staircases giving access to upper stories, and the purpose of the various chambers, are much the same as those of the other Cretan palaces. On the west side of the court there are ranges of magazines, as at Knossos, still containing long rows of store jars. The rooms generally are small and are grouped as in other Cretan palaces without any very definite plan and the method of roofing is of a simple post and beam type throughout. In addition to the magazines there are courts, porticoes, porches, bathrooms, and pillar rooms, but except for the splendid Middle Minoan sword here beautifully reproduced in colour and the wonderful ceremonial axe-head of the same date the finds of painted pottery, frescoes, bronzes, ivories, stone bowls, and the like have been rather disappointing. Still the bronze sword with its hilt of gilt limestone and its pommel of rock crystal, and the axe-head of brown schist in the form of a crouching panther with elaborate scroll work ornament, are a rich compensation.

The site was first occupied in neolithic times and the first buildings that survive date from the second Early Minoan age. The palace was built in Middle Minoan I and was remodelled in Middle Minoan II and III, though in M. M. II it seems to have been deserted for a time. It was destroyed by fire in Late Minoan I after having been well looted.

The main part of this book is devoted to a simple and useful description with plans and photographs of the various chambers and courts so far uncovered, and at the end are short notes on the principal classes of objects found in the excavations. The general account is clear and good, but more detailed plans would have been welcome. In a site of this type where the dating depends so largely on the architecture and the successive strata of rebuilding or remodelling clear stone for stone plans showing the character of the construction are essential. Sections should also be generously provided to illustrate the stratification, since in a palace of this type where filling or levelling or cutting down have taken place it is not always possible to determine the date of a building by the remains found below its floors alone. On the whole, however, the authors have acquitted themselves well.

A. J. B. WACE.

ÉCOLE FRANÇAISE D'ATHÈNES. ÉTUDES CRÉTOISES, II. MALLIA.

Écritures Minoennes. By F. CHAPOUTHIER. Paris: Geuthner. pp. 100 and 8 plates. 80 francs.

In the northern part of the west wing of the palace at Mallia in a small chamber approached from a shallow porch the French excavators found in 1923 a deposit of clay sealings and of inscribed roundels, bars, and tablets of clay. In some cases the signs

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were impressed, in others incised. M. Chapouthier dates the deposit to the later years of Middle Minoan III, perhaps even to the transition between M. M. III and L. M. I. He regards the rooms where the deposit was found as the record office of the palace and the tablets themselves as the remains of accounts, for numerals are prominent on them. There are thirty-three hieroglyphic and three linear documents. The first divide into seven classes: seal impressions, inscribed impressions, medallions, plaques inscribed on both sides, rectangular bars of clay, tablets, and vases. He analyzes the signs represented with care and precision, giving their analogies with Cnossus, Phaestus, and other sites, and points out what signs are new. He finds no boustrophedon inscriptions and thinks that contrary to the Cnossian custom the signs usually run from right to left. The three linear documents belong to class A and show two new signs. The author briefly discusses the origin of the alphabet, and after examining the evidence for the three principal claimants concludes that Egypt, Crete and Phoenicia in turn and in successive ages each led the way in the evolution of writing and in the development of the alphabet. While admitting the services rendered by the Phoenicians he believes that they themselves invented few or none of the signs, but took them over from Crete. Their invention was the division of the language into a small series of simple sounds. He also describes the signs incised on the blocks of the walls and shows that these are mostly M. M. I, though some belong to the period of reconstruction in M. M. III. These symbols, which are usually large and deeply cut, seem to be arranged according to the various quarters of the palace and each quarter seems almost to have had its own symbol. These signs do not he thinks have any religious significance, more especially as they were cut on the stones before they were put in place. So he decides that they were cut in the quarry and were masons' or quarrymen's marks.

The author deserves hearty thanks for this simple straightforward publication of new material which is thus made accessible to all scholars and archaeologists. Such full and prompt publication is in itself alone a valuable contribution. A. J. B. WACE.

THE PLACE-NAMES OF GALLOWAY: their origin and meaning considered.
By the Right Hon. SIR HERBERT MAXWELL, Bt., F.R.S. *Glasgow: Jackson and Wylie, 1930. pp. XLVI, 278. 21s.*

This book deals with an area hitherto untouched by students of place-names, and it includes not only all names on the 6-inch map but also a considerable number of field-names gathered from various sources. The material is arranged alphabetically, under the names of the parishes; the early spellings where these exist are given and the interpretation whenever possible. The position of the stress accent is indicated in every case and the importance of this is well seen in such names as Ernespie and Gillespie. Here the accent falls on the second syllable so that it is clear that the ending is not the Old Norse *by* as in Golspie in Sutherland.

By using the alphabetical order the author saves himself the trouble of an index, but the book might have been more readable and would certainly have been more interesting had the names been grouped topographically under their respective parishes after the manner adopted by Professor Watson in his *Place-Names of Ross and Cromarty*, and later by Mr Kneen and by the English Place-Name Society. By this means the distribution and frequency of certain names and elements in the different areas could have been noted. Also the parish names would have been given an important and conspicuous position in each case instead of being hidden among a multitude of field and farm names.

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The author has had to contend with several difficulties. In the first place the early material for the two counties surveyed is poor. There appear to be no monastic cartularies dealing with this part and very few other special sources. That monumental work, the *Origines Parochiales*, was unfortunately not completed so far as to include any part of Galloway and it has seldom been possible to obtain spellings earlier than the 15th century even for the parish names.

On the interpretation side we have the disadvantage that the Gaelic language has now been extinct here for nearly 400 years, so that it is not possible to get from the natives the correct accentuation and pronunciation of the names as was the case for example in Ross and Cromarty. As a result of these disadvantages a large number of names have had to remain unexplained.

The author has evidently consulted Professor Watson's *Celtic Place-Names of Scotland*, but he does not appear to have profited to the fullest extent by it. The names of the late Dr MacBain and of the Rev. J. B. Johnston do not appear at all in his bibliography. The former's etymological dictionary might frequently have given some assistance.

Sir Herbert does not readily accept Professor Watson's statement that the earlier inhabitants of Galloway were a Brythonic people akin to those of Strathclyde. Nevertheless such is the opinion of most present-day scholars. It is true that but a handful of British names appear to have survived, the proportion being smaller than in most other parts of the Lowlands. A few names explained from Gaelic sources may, however, be British. *Leswalt* probably contains, as suggested by Professor Watson, a word equivalent to Welsh *gweyllt*, 'grass'. Some of the compounds in *Car-* and *Mini-* may contain a British rather than a Gaelic first element (cf. Welsh *mynydd*, 'mountain').

Scandinavian influence is smaller than one might expect and is much less evident than in the adjacent county of Dumfriesshire. There are two or three names in *by* as Applebie, Sorbie (the latter, unexplained in the text, is probably identical with Sowerby in Yorkshire, the first element being the Old Norse *saurr*, 'mud, dirt'). Other typically Scandinavian names are Cogarth, Physgill ('fish gill'), Rerwick, Trondale and Hestan Island, a curious perversion of Estholm, 'east island'. We have a few hybrid names such as Glenstockdale, Arbigland, Arbreck, with a later Gaelic prefix added. The Mull of Galloway may be referred to the Old Norse *muli*, 'jutting promontory', though Sir Herbert would prefer to associate the name with the Gaelic *maol*, 'bald'.

English influence dates from the 7th century, when the district came under the influence of the Angles who had already in the previous century conquered the land between the Tweed and the Forth. A fair number of the parish names of the two counties are of English origin. Stoneykirk is explained in the text as 'Stephen's kirk' but the early spellings point rather to 'stony acre'. Twynholm is explained from Old English *betweonum*, 'between'. The meaning is rather 'between the waters', the name being identical with Twineham in Sussex. One or two other names may be either English or Scandinavian, e.g., Borgue, Tungland (cf. Tongue in Sutherland). A noteworthy feature is the large number of parish names with prefix *Kirk-*, the second element being a saint's name, usually, though not invariably, an Irish one. These so-called 'inversion compounds' are of course common elsewhere in the Lowlands and also in Cumberland.

The vast majority of the place-names of Galloway are Gaelic, including nearly all names of farms, fields and natural features. The first influx of Gaelic-speaking people took place after the defeat of Egbert in 756, and the Gall Ghaidhil who gave the name to the district are first mentioned in 852. Gaelic was probably the only language spoken

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by the people during the next six or seven hundred years, a sufficiently long period for most of the places to be re-named. As a rule the Gaelic place-names are of the simple descriptive type and thus offer few points of special interest to the archaeologist or historian. Most of the common elements to be found in Highland place-names occur here in varying proportions and on the whole a comparison of the chief elements in use shows affinity with Scotch rather than with Irish or Manx Gaelic. It may be therefore that intercommunication between Galloway and Ireland was not so frequent as has sometimes been supposed.

To judge by the Introduction and the general tone of the book, the author's interests have been on the topographical rather than on the historical and philological side, so that while the volume cannot by any means be said to reach the high standard set by MacBain, Watson, and other scholars, it should yet prove of some interest locally and to all those interested in Scottish scenery and topography.

J. E. GOVER.

MINOANS, PHILISTINES, AND GREEKS, 1400-900 B.C. By A. R. BURN.
Kegan Paul, 1930. pp. xvi, 274, with 16 plates and 2 maps. 15s.

There are two classes of books which can be written about the Aegean civilization. In the first class come the original reports of excavations, publications of surviving monuments, and other researches described and discussed by the archaeologists who have actually carried out the work. Books of this class are permanent because the record of a scientific excavation is part of the raw material from which the history of the Aegean Neolithic and Bronze Ages must be reconstructed. The second class comprises books of more general appeal, usually not written by archaeologists who have specialized in this field. These in a more or less popular manner endeavour by co-ordinating the archaeological results with literary and other tradition to produce a connected story, and from this to explain Pelasgians, Achaeans, Dorians, Philistines, Carians, etc. Such books from their very nature cannot expect a long life since they depend more on theory than on fact, and often instead of being based on a fresh impartial review of the archaeological and other evidence employ, in part at least, the theories of earlier writers. Mr Burn's book is a good example of the second class. The author naturally suffers from the disadvantage of not having a first hand acquaintance with the archaeology. In order to present his case he is at times compelled to be more definite than the evidence warrants, as for instance in saying, 'It was in the years following the earthquake that the first Cretan settlers landed in Argolis' (p. 75). The Thessalian domicile of the Achaeans is not certain (p. 69), nor is the connexion between the Second Thessalian Period and the Ukraine. He puts too early a date on the palace at Tiryns (p. 77), and to say that the northern megaron is characteristically absent in the palace at Thebes is stretching the facts, for only a very small area of the Theban palace has yet been cleared, and further its date may have to be brought down later, like that of the Tirynthian palace. He does not attempt to distinguish in the last phase of the Bronze Age between the products of the mainland and of Crete, which is essential for a historical understanding of the archaeological facts, and his two statements about the culture of Mycenae on pages 75 and 105 are somewhat inconsistent. He overlooks the fact that Mycenae, Tiryns, and other walled 'cities' are not cities, but palace-castles.

The first part is mainly explanatory and provides a readable introduction to the subject. In the second part the first four chapters demand specialist archaeological knowledge and are weak, but in the next three chapters, dealing with Egypt, the Hittites,

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and the Sea Raiders, the author is more at home, being able to use the Egyptian and Hittite records. He should, however, be cautious in accepting Forrer's identification of geographical and personal names. Chapter viii is an interlude and the next two on the Achaeans and the Iron Age approach very debatable ground. The origin of the Philistines seems to be left somewhat obscure, but the author constructs a good connected account of their history based on the biblical and other records. In some respects, for instance in defending the culture of the Greek mainland in the third phase of the Late Bronze Age from the accusation of degeneration and decadence which is often thoughtlessly levelled against it, and in his appreciation of the engineering achievement of the Treasury of Atreus, Mr Burn shows independence of judgment, but at other times he seems overawed by the reputations of the authors whose syntheses he uses. Still those who need a general account of this period which attempts to combine archaeology, history and legend will find this book most serviceable, but it should not be made the basis for further research without reference in every case to the original authority, archaeological or historical, and without sorting out fact from theory. The illustrations are an assistance but not essential. The Treasury of Atreus on plate viii might have been given its name, and two blocks on plates viii and xvi give the appearance of having been borrowed from the *Cambridge Ancient History*.
A. J. B. WACE.

DET NORSKE FOLKS LIV OG HISTORIE GJENNEM TIDENE, fra oldtiden til omkring 1000 e. Kr. By HAAKON SHETELIG. Oslo: H. Aschehoug & Co. 1930. pp. 392. Price not stated.

This book is a masterpiece of compression. To depict Norwegian culture and development over a period of 7000 years in a handy volume of this size, beautifully printed and lavishly illustrated, and to include therein everything essential of what has been laboriously ascertained by the research of archaeologists of three generations at least, is in itself something of a *tour de force*. Yet this has been done, and to every student of northern European archaeology the book will be indispensable.

It is the first volume of a projected work on Norse life down through the ages, of which Professor Shetelig and three others are the general editors. It is apparently designed for the ordinary reader rather than the specialist, and in consequence controversial matter is reduced to a minimum. The author seems, indeed, to have adopted the recent theory with regard to the chronology of the Viking Age, of which Professor Koht is the best known exponent. On this theory, the traditional date of the battle of Hafrsfjord is brought down from A.D. 872 to c. 900, and contingent dates are altered accordingly. But, apart from that, there is hardly anything in the book which will not meet with general acceptance.

Beginning with a brief account of the Ice Age in the North, the author outlines for us the whole course of Norwegian life from that of the hunters of c. 6000 B.C. (the so-called Fosna and Komsa cultures), down through the centuries until those earliest folk and their essentially bone-culture were superseded about 4000 B.C. by the Norwegian 'Elder Stone-age' or Nøstvet folk (with their characteristic stone axes); and the later 'Younger Stone-age' folk who, in turn, were succeeded by the Bronze Age people of the great burial mounds; and so on through the relatively modern Iron Age, the Roman, the Migration, and the Merovingian Periods down to A.D. 1000, when the mighty pulsations of the Viking Age were already subsiding, and Odin, Thor and the other pagan divinities yielding to the White Christ.

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The exposition of the differences between the rock-carvings of Neolithic and those of Bronze Age date is illuminating and convincing. The former are shown to be naturalistic renderings of animals etc., carved with definitely magical intent to assist the hunter; the latter are, on the whole, schematic, and pretty obviously of religious origin. Nothing in the book is more striking than the remarkable continuity evinced between the neolithic carvings and the comparatively recent runic inscriptions, which by reason of their new variety of magic rendered the earlier magic obsolete. His sober comments also on cup-marks (wherein he follows Sophus Muller) might be read with profit by way of contrast to some of the fantastic theories current in this land. The chapters dealing with the multitudinous relics of the Viking Age are particularly good (especially in regard to art) but on the historic side the reader should supplement this summary with a study of Kendrick's recent volume on the Vikings, as well as the late Dr Bugge's brilliant volumes *Vikingerne*, and *Vesterlandenes Indflydelse etc.* Professor Brøgger's book also (reviewed *ANTIQUITY*, June 1928, 253) casts much new light on the same period.

Norway is singularly fortunate in having as custodians of her noble antiquarian museums in Oslo and Bergen two such indefatigable expositors of her ancient past as Brøgger and Shetelig—a couple who, by reason of their complementary labours, might not unfitly be termed the Dioscuri of her Dawn. Readers of *ANTIQUITY* will also join in the congratulations Professor Shetelig has lately received on his being created by King Haakon a Knight of the Order of St. Olav.

HUGH MARWICK.

THE HISTORIA REGUM BRITANNIAE OF GEOFFREY OF MONMOUTH.

By ACTON GRISCOM. *Longman*, 1929. pp. 690, and 16 plates. 42s.

This stout volume, produced in a lavish style with everything handsome about it, is certainly a monument of industry. Of its nearly 700 pages, 320 are occupied by a Latin text of the *Historia*, collations with two other manuscripts, and a translation of one of the Welsh Bruts printed concurrently with the Latin. It is strange to think that we have had to wait so long for a good printed text of what is, admittedly, a most important work, but it is a fact that a rather slipshod 16th century edition has been the basis of all subsequent editions. Mr Griscom therefore deserves the gratitude of scholars for at last providing what appears to be a sound text. He prints as his text the version of MS. no. 1706 in the Cambridge University Library, which is in his opinion one of the earliest of extant 12th century MSS of the book, and gives minute collations with two other MSS, one of the 12th and one of the 14th century. It seems unlikely that anyone will want more than this for a long time, though endless and horrifying vistas of collation present themselves when one reflects that Mr Griscom lists 190 MSS of the *Historia*, of which no less than 48 belong to the half century after the first appearance of the book. Mr Griscom devotes 56 pages to an elaborate discussion of the various dedications found in different MSS, and comes to the conclusion that the date of publication was early in 1136.

That so many early MSS should survive to the present day is a striking proof of the amazing popularity of the *Historia Regum* from its first appearance, a popularity which had the important result for European literature of spreading far and wide the beginnings of the Arthurian legend. It is indeed mainly students of literature who have hitherto been interested in Geoffrey of Monmouth and his work, and the general view is and has been that the basis of the book is a liberal use of Nennius, Gildas, Bede and perhaps Virgil and Livy, eked out by a plentiful supply of Welsh traditions and folk-tales, and

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that this last element is so twined about all the rest that it is impossible to disentangle any shreds of historical fact which may be there. It is this position which Mr Griscom sets out to demolish. Briefly his theses are (1) that Geoffrey was simply telling the truth when he said that he had translated his book into Latin out of a very old book brought out of Brittany by Walter the Archdeacon; (2) that the numerous Welsh Bruts or Chronicles, which are generally held to be translations or adaptations of the *Historia*, are in reality independent versions made from the sources used by Geoffrey; (3) that a careful study of all these Welsh compilations would be very fruitful to the historian of early Britain.

Without being dogmatic on the first of these points (it is not, and cannot be, certain that Geoffrey had not written sources which have failed to survive) it may be said at once that Mr Griscom quite fails to establish his second and main contention. In the first place there is the undeniable fact that whilst the oldest MSS of the Latin *Historia* can certainly be dated before Geoffrey's death in 1155, the oldest MS of a Welsh Brut has never been dated earlier than 1200, though late 13th and 14th century MSS are not uncommon. Lacking a Welsh MS older than the Latin ones, Mr Griscom's best support would be the existence in the Welsh of substantial historical passages not found in the Latin work, but he produces none; the few additions found in the Bruts consist of typical pieces of Celtic folk-lore such as the story of Llud and Llevelys. Certainly a comparison of the translation of a Welsh text given here with the *Historia* seems to show without a doubt that the one is a (somewhat condensed and free) translation of the other.

Finally Mr Griscom makes a good deal of play with statements that Geoffrey's historical value is being borne out by recent anthropological and archaeological discoveries. He only cites two examples. (1) Geoffrey states that Pascentius, the son of Vortigern the British king, went to Ireland to obtain assistance and was well received; and there are in Ireland two stones with inscriptions in ogham characters which have been deciphered as 'Ailella maqi Vorrutigurn' and the single name 'Vortigurn'. At the most however this would only prove what has never been contested, that Geoffrey did embody in his book a good many traditional stories which may have some historical truth; but even this rests on the tacit assumption that the name Vortigern can only have been borne by one person, which seems quite unjustifiable. (2) the second instance is more curious. Geoffrey has a story of a battle between the British leader Asclepiodotus and the Roman general Gallus at Londinium, when the Britons defeated the Romans and killed all but one Legion, who then sued for mercy; but whilst Asclepiodotus was considering their plea, the Venedoti attacked and massacred them, beheading them all in one day beside a small stream beneath the walls of the city 'qui postea de nomine ducis britannice nantgallun, saxonice vero galabroc nuncupatus fuit'. Now in the course of various excavations along the river Walbrook in London there have been found great numbers of human skulls, but hardly any other bones. Mr Griscom takes the view that Geoffrey was retailing a true tradition of a historical event, and that the name of the stream still commemorates it. It is, however, hard to swallow Geoffrey's etymology, and the early forms of the name Walbrook seem incapable of bearing any other explanation than that of being derived from the Old English *weale broc*, the stream of the Britons. Is it not possible that skulls were dug up along the stream even in the 12th century, and that etymology and story were invented to fit them?

It should be noted that the book also contains very full lists of all the known MSS both of the Latin and the Welsh versions of the *Historia* and several good indexes.

E. G. WRITHYCOMBE.

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BRONZEZEITLICHE UND FRÜHEISENZEITLICHE CHRONOLOGIE. II, HALLSTATTZEIT. By NILS ÅBERG. Stockholm: Im Verlag der Akademie, 1931. pp. 109 and 225 figs. 20 kr.

Following in the footsteps of Montelius, Dr Åberg is setting out to build up his new and more accurate absolute chronology of the prehistoric metal ages in northern and central Europe on the relations with Italy. The study of Italian chronology, already reviewed in *ANTIQUITY*,* formed the first step in the construction and a necessary prelude to the present volume. (We shall see in the sequel that the criticisms there made by Dr Randall-MacIver on our author's dating of certain phases in Upper Italy are borne out by the results of the present work). The 'Hallstatt period' being the first epoch when any considerable number of accurately datable imports from Italy are found in barbarian graves north of the Alps, the determination of its chronological limits naturally forms the second step in the elaboration of the projected system.

But the stage is a difficult one. Under the name Hallstatt are usually lumped together a variety of distinct cultures whose exact chronological and cultural relations have not as a whole been worked out by detailed preparatory studies such as were already available for Italy. Moreover the various authorities differ widely in their use of the term 'Hallstatt period'. Dr Åberg wisely defines it as the epoch covered by the cemetery at Hallstatt itself (excluding of course the distinctively La Tène graves). He therefore, like Kraft, treats what Reinecke calls 'Hallstatt A' as the last phase of the pure Bronze Age. This, I believe, makes for clarity even though iron objects may already appear in graves of this stage, for instance at Maria Rast in Styria. Like Hoernes and Déchelette he contents himself with a two-fold division, and this again seems all that is practicable at the moment though the subdivision of the earlier phase into two, corresponding to Reinecke's phases B and C, is a desideratum that can already be realized in some areas such as Würtemberg.

But even within the limits thus laid down the cemeteries containing grave-goods comparable with those from Hallstatt fall into a number of distinct local groups, each in the main rooted in earlier Bronze Age cultures. Some recent authors have elevated types distinctive of a cultural group, a tribe or people, into chronological criteria; we read of a Gündling phase instead of a Gündling culture. Thus inflated chronologies have been created, the fallacies of which could be exposed by a little simple cartography. Dr Åberg studiously avoids the error of taking local products, embodying the fashions of a perhaps conservative folk, as indicators of general chronological value. Instead he examines all tomb groups from the representative areas containing datable objects of Italian manufacture in a significant context. The task, thus rightly conceived, is admirably executed, and the discussion affords perhaps the best existing guide to the Hallstatt period as a whole. The relevant grave-groups are figured, and much material, otherwise difficult of access or unpublished, is made available.

Apart from certain types, such as antennae swords and harp-fibulae, which go back to the Bronze Age and may therefore have a wider range, the general conclusion is that the earlier Hallstatt phase is parallel to the Arnoaldi period in Upper Italy, the later to the Certosa period. This revolutionary result is supported by solid arguments. The imported Italian bronze vessels from the earlier graves at Hallstatt and elsewhere are all decorated in the unmistakable style of the Arnoaldi cemetery. In Italy antennae

* March 1931, pp. 125-8.

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swords, which Reinecke assigns to Hallstatt A, may occur as late. Again in the later tombs we have figured bronzes of Atestine style admittedly of early 5th century age. Many of the fibulae assigned to the later Hallstatt period can no doubt be paralleled in the Arnoaldi phase (some like his fig. 175 even in Benacci II) of Upper Italy. But in grave 696 at Hallstatt one such was associated with a bronze bucket-lid of the aforementioned Atestine style. It may then be that the parallelism is not exact, each of the Hallstatt phases beginning a little earlier than the corresponding phase in Italy, but one must admit that the author has established it in general.

What of the absolute chronology? On our author's dating of North Italian phases, the earlier Hallstatt period lies between 650 and 500 B.C., while the later occupies the 5th century. The La Tène period must then begin 'after rather than before 400 B.C.'. This last conclusion can be checked by data independent of the disputed Italian chronology, namely by imported Greek vases from early La Tène graves. Now some of these unambiguously belong to the 5th century rather than the 4th. A slice of the former must therefore be assigned to the La Tène period and not to the Late Hallstatt. Dr Aberg has paid little attention to these Greek vases though he criticizes very pertinently Reinecke's other arguments for dating La Tène high. In justification for his 4th century dating he contends that the close contact between Gaul and the Hellenic world which quickened the La Tène culture into life can only be the reflex of the Gaulish invasion of Upper Italy about 400 B.C. But Navarro (ANTIQUITY, II, 423) has shown that Greek influence was reaching inner Gaul from the 6th century or earlier by way of Massilia, so that the above contention falls to the ground.

But if La Tène begin at 450 B.C. or earlier, it is manifestly impossible to squeeze both phases of the Hallstatt cultures into the two centuries after 650 B.C. The lowest possible date for the beginning of early Hallstatt is nearer 750. But if we accept Randall MacIver's date for Arnoaldi, Aberg's parallelism between that period and early Hallstatt is still tenable. That parallelism on the other hand demands a substantial reduction in the high dates (1000, 900 B.C.) proposed by Reinecke, Déchelette and others for the beginning of Hallstatt.

Doubts as to the validity of his absolute chronology in no wise detracts from the utility and merits of this indispensable work. We are especially grateful for this devastating exposure of the inflated chronologies, recently popular in northern Europe, from one who is himself not only a North European, but to some extent at least has been regarded as a Pan-Germanist. We must also note as convincing the synchronisms established in detail between the sixth period of the Nordic Bronze Age (enlarged to contain some late types of the fifth) and early Hallstatt, and between the first phase of the northern Iron and Late Hallstatt. It will be seen that Denmark began using iron considerably before Great Britain.

V. GORDON CHILDE.

THE CAMBRIDGE ANCIENT HISTORY. Plates volume III, prepared by C. T. SELTMAN. Cambridge University Press, 1930. 121 6d.

The third volume of plates for the *Cambridge Ancient History* is designed to accompany volumes VII and VIII, which deal with the Hellenistic Monarchies and the rise of Rome to 133 B.C. As Mr Seltman, its compiler, writes in his preface, 'It depicts the civilized world and its barbarian fringes eagerly borrowing, selecting, modifying the artistic ideas of the Greeks'. This volume is of exceptional interest to students of prehistory, for their knowledge is all too often limited to the parts of their subject that

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are concerned with Western Europe; and it is impossible to form any true appreciation of the art of the Celts without some acquaintance with the productions of the Ancient World to which the barbarians were so deeply indebted. Such information is to some extent supplied, and very definitely indicated in this volume of pictures. Here can be seen the familiar Marne chariot burial, four whole plates of artifacts from the La Tène site and objects of metal and pottery from other Celtic settlements together with the classical models to which they owed so much. Scythian and other products from remote districts are comparatively difficult of access, even in reproductions, for most people in England, and those who saw the fine exhibition of Art in the Dark Ages of Europe arranged by the Burlington Fine Arts Club in 1930 will be delighted to find reproductions here of the two gold stags from Hungary which were among the most striking objects in that collection.

This volume also contains some of the best known examples of Greek sculpture, including the Samothracian victory from the Louvre, the Laocoon and the Melian Aphrodite.

The Roman portrait heads and the portraits on Hellenistic coins are admirably clear, as are the pictures of the large collection of ancient coins generally. To some readers the most interesting plates will be those that reproduce ancient paintings, since, apart from vases, these are seldom available, and the mural decoration of ancient houses accords more with our own familiar furnishing than any other relic of the past, and so makes our realization of the conditions of ancient life more intimate than the contemplation of vases or sculpture can do.

The last plate of all shows a painted statue of a priestess of Tanit from Carthage. Her wings, folded round her body, are like those of an Archangel, and her style is partly Greek and partly Egyptian, and wholly lovely, and she leaves us with an unwontedly warm feeling for that strange city with its acquisitive civilization.

The illustrations have been selected by the authors concerned with the various subjects, and for their preparation and reproduction both Mr Seltman and the Cambridge University Press are to be congratulated.

DINA PORTWAY DOBSON.

HISTOIRE UNIVERSELLE DES ARTS DES TEMPS PRIMITIFS JUSQU'A NOS JOURS, publiée sous la direction de Louis Réau. vol. 1. *L'Art Antique, Orient-Grèce-Rome*. By G. CONTENAU and V. CHAPOT. Paris: Librairie Armand Colin, 1930. pp. 432 with 314 illustrations and 3 maps. 60 francs.

This book is a marvellous feat of compression, and will be of great use to those who have need of a compendium of ancient art. The first part deals with the pre-classical civilizations, and a short historical sketch is given of each, before the art is dealt with. This is wisely omitted in the sections concerned with Greece and Rome. A certain amount of comparative criticism is included in the history of the development of art, but the work is chiefly descriptive. The lesser arts, such as metal-working and mosaic, receive their full share of attention, and there are useful short chapters on Canaan, the Hittites, Phoenicia, and other districts that are sometimes omitted from standard works on ancient art. It is interesting to note as an illustration of the acquisitive nature of the Phoenician people that they employed sarcophagi that were typically Egyptian, even containing embalmed bodies, together with others entirely Greek, or rather Lycian, of the type of that fine example named after Alexander. Architecture is not given much attention, which is disappointing, though it is easy to supplement this subject from other sources.

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The illustrations are well chosen, and generally well produced. A short bibliography of important books in French, English and German is added to each section.

The authors are to be congratulated on their wide knowledge of the artistic remains of this immense period, and on the production of a book of reference that provides pleasant reading.

DINA PORTWAY DOBSON.

THE ARCHAEOLOGY OF BERKSHIRE. By HAROLD J. E. PEAKE. *THE COUNTY ARCHAEOLOGIES*, edited by T. D. KENDRICK. Methuen, 1931. pp. 260 with 31 illustrations and 6 maps. 10s 6d.

These admirable handbooks are the children of that weary Titan, the Victoria County History. They attempt to condense within a single octavo volume the gist of those five heavy Victorian tomes. But, we hasten to add, they achieve both more and less than their progenitors. They achieve more because they are, in every sense, more handy, more up-to-date, more usable and cheaper; less, because their treatment is necessarily not so elaborate. They are conceived on a scale befitting the generation that is to use them. It may be said that they cannot justly be compared with the V.C.H.; and perhaps this is true. But the comparison, however odious, is inevitable, and to the detriment of neither. The County Archaeologies do not cover the same ground as the V.C.H.; they are primarily archaeological, whereas the V.C.H. is primarily historical. Moreover, these later handbooks are meant for a wider public, and may have the advantage of about a quarter of a century's progress in a subject which during that period has made enormous strides. During this period of accumulation, synthesis has been impossible. The present series is a successful attempt to consolidate our achievements.

Mr Peake's book is the first and most successful attempt to provide a *catalogue raisonnée* of Berkshire antiquities. Such a book, though necessarily dull reading in parts, is the kind of thing that was wanted by students. Whether it will be much used by the traveller, by road or rail, for whom the map at the end is designed, we do not know and frankly do not care. The strong side of the book lies rather in its record of finds, which the student will welcome most heartily; for Mr Peake lets no scrap of evidence, however humble, escape him. There are a fair number of inaccuracies, as might be expected; Eardulfe's lea (p. 164) is not in West Hendred at all, but Ardsley in Oxfordshire, and the Cwichelmes hlaew mentioned in it is another mound, not the celebrated Berkshire one.

We strongly recommend this book to all interested in Wessex—and who is not?

THE ARCHAEOLOGY OF KENT. By R. F. JESSUP. Methuen, 1930. pp. 268, with 13 plates and 13 figures. 10s 6d.

This book is one of the first volumes of the series of County Archaeologies, of which Mr T. D. Kendrick of the British Museum is editor in chief. It is evidently intended for the general reader. The author attempts a brief outline of the main points of English archaeology from the Old Stone Age to the Anglo-Saxon period with illustrations from Kent when possible.

The chapter on the Old Stone Age is good. Kent is rich in flint sites—Clacton, Crayford and Northfleet being household names. It is rather misleading to the uninitiated to state, when dealing with the Neolithic culture, 'they made pottery, very rough when compared with later fabrics, but still pottery'. The author mentions every theory pertaining to his subject, and in attempting to be strictly impartial tends to

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encourage the general reader to embrace them all. There is also an over-emphasis of uncommon occurrences ; for example on page 72 the reader may suppose that secondary burials of the Early Iron Age are to be expected in long barrows. The description of barrows is poor, and on page 117 ' the late Bronze Age ' should read ' the Bronze Age '. There are no plans of any earthworks, and the descriptions of those mentioned is of no value to the student. The chapters on megaliths, the Roman occupation, and the Anglo-Saxon period are among the best in the book.

The author states that ' so far, no trace of early lynchets or field systems have been noticed '. It is interesting to note that in Kent, as in Wessex, there is a scarcity of flint implements on the chalk downs, although they are plentiful on the greensand ridges. This may be accounted for by the fertility of the sandy soil and the probable growth of trees on the chalk at the periods when flint implements were in use.

There is a valuable archaeological gazetteer, which would have been still more valuable if the data had been placed under the headings of periods instead of under those of localities.

R. C. C. CLAY.

THE ROYAL COMMISSION ON HISTORICAL MONUMENTS, ENGLAND.

An Inventory of the Historical Monuments in Herefordshire. Volume 1. Southwest. *H.M. Stationery Office, 1931. pp. XLVII, 294, with 201 plates, 2 plans and map. 30s.*

The concise information in the inventory of the ancient monuments dating before 1714 in southwest Herefordshire is presented in a clear and well arranged manner by authorities in archaeology and architecture. In the past, descriptions of ancient monuments have often been loosely prepared, and pure conjecture has taken the place of accurate information. There is also the temptation to which so many writers on these subjects succumb, namely that of adding a touch of romance. The inventory under review is quite free from these faults. It is a scholarly report resulting from most painstaking and careful investigation. The illustrations are all good, and are often taken from unusual angles for the express purpose of showing points referred to in the letterpress.

The numerous plans of churches will be most helpful to all those who are interested in this branch of architecture. There is a fully illustrated and clear account of Hereford Cathedral, with a large-scale coloured plan which shows at a glance the dating of the various parts of this most interesting building. Like other cathedrals it has been described and illustrated over and over again, and one would have thought that every feature of interest in the building would have been noted. Nevertheless a discovery of first-class importance is described, in that the investigators are able clearly to prove that in the 12th century there existed at the east end of the church two small towers, the remains of which have been completely overlooked in all previous descriptions. The plan of this important discovery is given on page 93.

The inventory gives all the essential information as to the earthworks in the southwestern part of the county, and most complete accounts of the ecclesiastical and secular buildings. Of the former the cathedral and Kilpeck church are outstanding examples, and of the latter Goodrich castle is perhaps the most important.

Two fine bridges are described, namely the Wye bridge at Hereford, 15th century, and Wilton bridge near Ross, 16th century.

Under the heading of secular buildings some very charming half-timbered cottages

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and interesting examples of timbered roofs, plaster ceilings, wall paintings, ancient chairs, wall-panelling and so forth are illustrated and described.

The work is so different from anything which has gone before, both as to accuracy of description and fullness of illustration, that it must be possessed and examined to be appreciated thoroughly.

G. H. JACK.

PRIMITIVE METHODS OF WORKING STONE, BASED ON EXPERIMENTS OF HALVOR L. SKAVLEM. By ALONZO W. POND. *Logan Museum, Beloit College, Wisconsin, 1930. pp. 143 and 64 illustrations. Price not stated.*

The field worker in prehistory is frequently confronted with intriguing problems of type, technique and use in the flints he finds—and is usually too keen on his quest to spend much time in trying to elucidate, by immediate experiment, these recurrent questions of manufacture and intention in the varied artifacts he secures. And when, in search of enlightenment, he attempts comparison of his archaeological material with the products of the modern professional flint knapper, he is inclined to doubt whether these later productions, directed by a modern—and often commercial—mind, and executed by metal tools, form any useful criterion by which prehistoric flaking can be judged. In this Bulletin we have an interesting and convincing record of a flint worker, modern in date but primeval in resource, manipulating local material with nothing but local appliances, and producing implements identical with those of his old time predecessors.

Halvor Skavlem, ex-hunter and pioneer, fortunately settled on the site of White Crow Indian village. Induced by his discoveries of native implements to attempt to copy them, he has, according to the author, rediscovered in the manipulation of flint that 'art' which involves a complete command of one's material.

As a result, many of our preconceptions, such as the time taken and in the infinite patience shown by the savage in making his finer implements, have to go. It is probable that an occasional favourite tool may have been worked at for years in re-sharpening and thinning. But four and a half hours for making, from the blank, a grooved ground axe, hafted ready for use—with which a tree 3 inches in diameter was cut down in 10 minutes—does not appear an excessive time allowance, even in these days of accelerated production.

A minute and a half for serrating the edge of an arrow-head seems equally economical in time, while a shapely triangular spearhead, made, under direction, by Skavlem's 12-year old grand-daughter, finally disproves the need of any exceptional technical skill. The desirability of freshly dug flint is also called in question, based on first-hand experience and reinforced by the custom of the Brandon workshops.

The work is copiously—almost redundantly—illustrated, and it is of special value to see the actual tools—teeth or bone—with which specific arrow-heads, etc., were flaked, emphasizing the fact that in these cases the modern worker and his prehistoric brother were on an equal footing as regards technical resources.

The author draws attention to the necessary correlation of tractable material and fine workmanship and urges that greater stress should be laid on the factor of the availability of good quality of flint, etc., in attempting to relate culture with type of implement, adducing the instance of the sudden appearance of the Solutrean blade as perhaps partly explicable by the acquisition of good homogenous flint by a people previously struggling with coarse grained intractable material.

Considerable doubt is expressed on practical grounds, with regard to the 'Eolith'

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theory, for which the author has little use. He claims that it is a mistaken assumption that there *had* to be a stage before the rougher early Palaeolith. If and when man could chip a flint, he would make a usable tool, a fact against which the most impressive series of Eoliths, highly selected as they are, from illimitable gravels, do not form a convincing argument, owing to their relative inefficiency.

There is a useful discussion on percussion and pressure flaking, and the practical field worker will find the whole work well worth perusal.

One error in description appears under fig. 51, page 33.

G. W. WILLIS.

A SURVEY OF ANCIENT HISTORY TO THE DEATH OF CONSTANTINE.

By M. L. W. LAISTNER, Professor of Ancient History in Cornell University.
Boston: D. C. Heath and Co., 1930.

Professor Laistner tells us that for some years past he has given to his first year students an introductory course of lectures in general ancient history, and it is mainly for their use that he has written the present 'survey', which is also to serve as a text-book.

The difficulties of making such a book, carrying us in time from Ur to Constantinople, and comprising all aspects of history and civilization—political, military, social, economic, religious, literary and artistic—are enormous. In practice, much has to be sacrificed in order to reduce the work to a reasonable compass.

After an introduction dealing with sources, and methods of chronological reckoning, which is too short to be of much practical value, the author takes us very rapidly through the Stone Ages and so to the early history of Mesopotamia. Here, as elsewhere, we feel that Professor Laistner has both the knowledge required and the gift of exposition necessary to make his subject interesting, if he could only be allowed more scope.

We pass through the various empires of the East to a summary of Aegean civilization, and so to Greece, and last of all to Rome.

The work is, inevitably, of uneven merit. In the literary chapters the space available is so small that a fairly important author has to be dismissed in half a dozen lines, and some features in political life, *e.g.*, the tyrannies of Central Greece, get less attention than their importance deserves. On the other hand, the social aspects of history are often so well treated in a short space as to give us a clear picture of the conditions which the author is describing.

The book will undoubtedly serve its purpose as an introduction, and may give the general reader ideas as to subjects of which he would like to have more detailed knowledge. If he has not the opportunity of hearing Professor Laistner expand some of these themes, he will do well to turn to the bibliography, which is excellently classified with reference to each chapter. In conclusion, the plates are well chosen, and for the most part well executed.

J. F. DOBSON.

ANCIENT CIVILIZATIONS OF THE ANDES. By P. A. MEANS. *Charles Scribner's Sons*, 1930. pp. 586. 30s.

Mr Means is an exponent of the extreme 'Monroe doctrine' in American archaeology. Similarities of language and culture with Asia he ascribes to the fact that the ancient Andeans and Polynesians had for common ancestors a quite imaginary and non-existent 'yellow-brown race of Asia'. Every Polynesian canoe is religiously shooed away from Peruvian coasts, and a fantastic ingenuity displayed in reshuffling pure and patriotic autochthonous culture-waves.

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Apart from the general question of approach, however, this large and satisfyingly-illustrated volume is (and no doubt will be largely described as) a mine of information with regard to the cultures of the Andean valleys and coasts. The comparative quotations from the Spanish chroniclers are lengthy and enlightening, and the conclusions drawn from them no more selective than a preconception warrants. Replacing a general archaic culture, the author sees the simultaneous rise of the first coastal and Tiawanakon civilizations. These reacted and resulted in the domination of the hybrid 'Tiawanakon II'. A period of decline followed, from the midst of which the Inkas and their 'empire' rose into being.

The sections on Nasca and Chimu pottery-ware are amongst the clearest and least didactic, though it is to be doubted if the respective chronologies ascribed to these cultures can be justified. There are lengthy and well-documented surveys of every phase of Inka and pre-Inka art and industry—the section on 'Art of the Loom in Ancient Peru' is particularly full and admirable.

Mr Means is at his happiest when dealing with general matters of sociology and religion; not when encountering definite questions of dynastic change or culture-origin. No such thorough examination of the life, material and spiritual, of all classes in the Inka 'empire' has yet appeared in print.

J. LESLIE MITCHELL.

ANCIENT EGYPTIAN MASONRY. By SOMERS CLARKE, F.S.A., late Surveyor to the Dean and Chapter of St. Paul's Cathedral, and R. ENGLEBACH, Keeper of the Egyptian Museum, Cairo. *Oxford University Press, 1930. pp. 242 and 267 illustrations, with map. 63s.*

This book is something worth the doing, and, being done—it is done well. It is well conceived and therefore destined to become a standard work of reference. What makes it so remarkable is the imaginative power which gives a vivid and real insight into the life, the problems and the mentality of the builders, and recreates the events of the past so vividly.

Egyptian masonry is dealt with in all its phases—from the methods of quarrying soft and hard rocks, its preparation for building, transport, lifting, laying, foundations, bedding, dressing, and carving. There are also chapters on brickwork, Egyptian mathematics, masons' tools, etc., with addenda on painting and pigments, and provision against rain.

Students of constructional work will read this book with great profit, and learn much from the ancient solutions of problems of dealing with tremendous weights, the faults and mistakes made, and will correct many erroneous conceptions that would not have gained acceptance had the research work described in this book been available in the past. Many of the architectural text-books and histories of architecture will have to be revised in the light thrown on the early phases of building craft by the laborious and patient work of the authors.

It is regrettable that so much archaeological work is stimulated by the desire to gather spectacular 'finds' and that so little is done to elucidate fundamental conditions and the degree of civilization to which the inhabitants of a country may have arrived. The authors have vividly conveyed these conditions, and we are content to express our admiration of the profound scholarship and clear judgment that are apparent in the book, and their skill in compressing so much into a volume of 242 pages. The map, bibliography and index are as complete and accurate as could be desired.

WALTER K. BEDINGFIELD.

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BEGINNINGS OF VIJAYANAGARA HISTORY. By REV. H. HERAS, S.J., M.A.
Bombay : Indian Historical Research Institute, St. Xavier's College, 1929.
pp. 144. Rupees 4.

This little volume consists of two lectures delivered by Father Heras at the University of Mysore. It provides an excellent survey of the early history of Vijayanagara according to tradition and the known epigraphs, and as such forms an introduction to the author's previous work upon this important dynasty. It need not be said that much research and labour is here presented in a concise form. It is a pity that there is no detailed archaeological survey of the city to set beside Father Heras' account of its history. Now that the Islamic architecture of Egypt and Persia is being scientifically studied and recorded it is high time that the works at Vijayanagara, Bijapur and Golconda were reported in detail. Building-construction in India is almost an untouched subject.

K. DE B. CODRINGTON.

A STUDY OF KANSU AND HONAN AENEOLITHIC SKULLS AND SPECIMENS FROM LATER KANSU PREHISTORIC SITES IN COMPARISON WITH NORTH CHINA AND OTHER RECENT CRANIA.
Part 1. On measurement and identification. By DAVIDSON BLACK. (*Palaeontologica Sinica*, vol. VI, fasc. 1, *Peking*, 1928). *Price not stated.*

In this elaborate and extremely technical monograph Dr Black gives the results of his observations on the prehistoric crania excavated by Dr Anderson in central and north China. Dr Black has provided all the measurements that the most meticulous of anthropologists could desire, together with outline tracings. He has further introduced the most modern statistical methods into his survey. It is regrettable, but a fact, that the archaeologist is not usually able to find sufficient material in his excavations for statistical treatment and the material now under review is no exception to the rule. No doubt statistical results look tidy and attractive; they form, when properly handled, a most valuable method of summarizing results, but in their very essence they depend on fairly long series, say a collection of at least forty or fifty specimens of the same sex. Through no fault of his own Dr Black has not got sufficient numbers, and it seems very doubtful whether all his arithmetic was justified. His conclusions however are simple: that the earlier populations differ more widely from the modern than the later specimens from the same place, and that the earlier peoples show a certain resemblance to one element in the population of Tibet. It is to be hoped that further excavations will be more prolific and allow these conclusions to be amplified.

L. H. DUDLEY BUXTON.

CORPUS OF DATED PALESTINIAN POTTERY. By J. GARROW DUNCAN.
Including pottery of Gerar and Beth-Pelet, dated and arranged by SIR FLINDERS PETRIE, and Beads of Beth-Pelet, dated and arranged by J. L. STARKEY. *British School of Archaeology in Egypt (University College, W.C. 1).* *pp. 21 and 120 plates.* 30s.

The corpus is a compilation from various sources but has been built up round the Tell Jemmeh (Gerar?) and Tell Fara (Beth-Pelet?) collections, and the classification adopted is that used by Sir Flinders Petrie, which the author tells us he agreed to adopt in the end, after having arranged his material in the usual Neolithic—Roman periods.

It is an attempt to put in a convenient and a handy form all the information a field-archaeologist might want from the published works on excavations in Palestine. Many

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of the specimens illustrated will figure later among the exhibits of the New National Museum at Jerusalem, now in course of building. It is to be hoped then, that a consensus of expert archaeological opinion will be obtained, so as to arrive at a scheme of chronology and a system of dating and arrangement, as precise as may be and as consistent as possible, for the assistance of those students who hope to profit from the large collection of material that is becoming available and which the new museum is intended to house.

It is very difficult to make head or tail of the illustrations :—broadly speaking we start with bowls and finish with bottles. The types are not collected together nor is any attempt made at chronological order. Each specimen so far as it serves, is marked with a dynasty in Roman numerals, sometimes with B, or L.B. in addition ; the later periods have letters only, some have nothing.

The main exhibits are of the Bronze Ages and a few of later periods. Megiddo has not been drawn on, for though it has been in course of the most exact and scientific excavation for some years nothing so far has been published ; so material there was not available for the period of the Hebrew kingdoms. The Greek, Hellenistic, Roman and Byzantine periods are almost ignored. This may be because they are unfashionable, archaeologists taking no interest in them in Palestine. The fascinating and beautiful medieval Arab and Crusading pottery is not represented at all ; not because it is not available for it is present in most Palestinian sites, but for the same reason possibly. It is to be hoped that the authorities of the new Palestine Museum will not neglect them ; it is always curious to find that the late Bronze and Early Iron Ages seem to be the end of civilization in Palestine, rather than its beginning.

The drawing of the plates is poor : the line employed is harsh, mean and wirey, nor has sufficient care been taken in neatness and finish. No definite system of section and elevation has been followed. The rare attempts at perspective and projection are crude in the extreme and the reduction of the pottery to 1:3 has reduced some of the pots to microscopic proportions.

G. HORSFIELD.

THE SUMERIANS. By C. LEONARD WOOLLEY. *The Clarendon Press, Oxford, 1929.*
pp. 193. 6s.

This well-written little book will give the layman a good idea of the Sumerian civilization. For scholars it will prove useful for its excellent reproduction of some of the important monuments of Ur. There are many traces of lack of profound knowledge of the inscriptions. For example the well-known ideogram for a kind of priestess SAL-ME (p. 107) should be rendered *naditu* or *naritu*, and there are many statements in direct conflict with modern Sumerology and Assyriology. For example it is said (p. 122) that the myths of Tammuz and Adapa provided stock subjects for artists. All scholars would be grateful for any archaeological illustrations of these myths, but nothing whatsoever has been found unless the familiar figurines of mother and child represent Ishtar with Tammuz as a babe in her arms. But this is unlikely, since these figurines never have the head-dress of deity. The Accadian story of the Flood is described (p. 122) as Sumerian, the citation (pp. 123-4) being from the Semitic version in the Epic of Gilgamesh, which induces one to question whether the author distinguishes between the Accadian and Sumerian languages.

Despite the obvious signs of utilizing translations and not original sources, the book, on the archaeological side, is trustworthy and useful. In a book of this kind the sources

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and names of authors relied upon for all statements should have been faithfully indicated. The author possesses an attractive literary style and ability of presenting his material.
S. LANGDON.

LIST OF OBJECTS OF INTEREST IN AND AROUND SLEAFORD, Lincs.

Compiled by the Rev. Canon ALFRED HUNT, Kirkby Laythorpe Rectory, Sleaford.

LIST OF EARTHWORKS IN THE COUNTY OF LINCOLNSHIRE AS CLASSIFIED BY THE REV. CANON HUNT. 10th edition.

The information in these lists is, we regret to say, wholly untrustworthy. We should not have reviewed them at all were it not that they seem to have been widely distributed, and that it is therefore a duty to point out their errors. Of the 41 'Roman' earthworks many are undoubtedly medieval and many others of unknown age. The identifications of ancient place-names—real and imaginary—are quite worthless; there was no such place as 'In Medio', and the location of the Navione of Ravennas at Wainfleet, first made by Stukeley, is impossible. (The true site is at Brough in Derbyshire). Causennae (Ancaster) is also identified with a quarry in the same list with Ropsley Grange Camp. The medieval site at Sempringham (described in *ANTIQUITY*, v, 106-9) is called Roman. With greater knowledge of Lincolnshire topography one could prolong the list of errors indefinitely.

THE ANCIENT BRIDGES OF THE NORTH OF ENGLAND. By E. JERVOISE,

A.M.INST.C.E. *The Architectural Press, 9 Queen Anne's Gate, Westminster.* pp. xii, 146 and 80 figures. 5s 6d.

The first volume of the survey of the ancient bridges of England was reviewed in *ANTIQUITY* for March (p. 144). The second volume is written precisely in the same style, and is equally well presented and illustrated. It deals with bridges of Northumberland, East Yorkshire, Cumberland, Westmorland and Lancashire.

Quite apart from the technical value of Mr Jervoise's work, and although he does not make a special point of the necessity for retaining our ancient bridges, the result must be a great encouragement to all those who are engaged in the preservation of the English countryside, and should secure the most careful deliberations of Road Authorities before they consider demolishing any of the beautiful examples of bridge work which are so well described. The fact that many ancient bridges will have to disappear is admitted, but it cannot be denied that in the past many, similar to those illustrated in these works, have been hastily destroyed without due regard being given to the possibilities of widening them. Further, it cannot be denied that bridges which have replaced the ancient ones do not possess any of the charm of their predecessors, and possibly will not last as long.

G. H. JACK.

A SEASON'S WORK AT UR. By H. R. HALL. *Methuen and Co., 1930.* pp. 300 and 277 illustrations. 25s.

This volume, his last legacy to us, makes us feel more than ever what a loss Dr Hall's premature death has been to learning and scholarship. It is not only a record of the archaeological work he initiated in Babylonia immediately after the war, but it also illustrates his combination of wide archaeological knowledge and insight, sane judgment and sense of humour. He has called it 'an unofficial account' of his work at Ur, Al-Ubaid, Abu-Shahrain and elsewhere, but it is all the more valuable for that reason.

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Full details in regard to the excavations at Al-Ubaid are especially important as it was there that the painted pottery was first discovered in Babylonia and its significance and relationship first pointed out.

The book, in fact, is a valuable contribution to the archaeology of Western Asia as well as a readable volume which the general public will find interesting. The numerous and excellent photographs which occupy its pages are a boon to the scholar and will also attract the ordinary reader. As a record of exploration and excavation in Babylonia it is worthy to stand by the side of Layard's classical work. In the account of Ur notice is necessarily taken of Mr Woolley's subsequent discoveries.

What may be called the human side of the narrative adds much to its interest. Travelling, even semi-officially, was exceedingly difficult, not to say physically trying, immediately after the Armistice, and southern Babylonia was still to a large extent at the mercy of the Beduin. Excavation was, consequently, not the easy matter it has since become and Dr Hall had to be careful in his selection of sites. Digging at Abu-Shahrain and Al-Ubaid, for example, was not unattended by danger.

Perhaps the most important incident in Dr Hall's campaign was the discovery of the painted pottery of Al-Ubaid. It has opened out a new chapter in the prehistory of the East, and in conjunction with later discoveries, more especially those of Prof. Andersson in China, has to a large extent revolutionized our ideas both of pre-Sumerian Babylonia and of the cultural relations of neolithic Asia from East to West.

As regards the relations of Sumerian Babylonia to the early culture of Egypt I am fully in agreement with Dr Hall. The imitation of the Babylonian seal-cylinder by the pre-dynastic Egyptians is of itself a proof of the influence of Sumer upon the Egyptian Delta. In a country where every pebble was of value and the writing material was clay the cylindrical seal was a natural invention; in northern Egypt, where neither was the case, the seal could have been only a foreign importation and accordingly passed out of use when the early culture of the Delta established itself in Upper Egypt.

The prehistoric pottery found at Abu-Shahrain raises the hope that before long systematic excavations will be undertaken on the site. 'All round the mounds, and more especially on the northeast and southeast sides', Dr Hall tells us, 'stretched out a flat space, about 100 yards or more, which was covered with innumerable fragments of ancient painted pottery, showing geometric or curved and floreated designs in black pigment on the greenish-drab surface of the vase. Sometimes the ware was soft, in which case the colour was brown or even reddish; at others it was almost vitrified, in which case the ware was green and the colour a vivid black. Obviously this ware was prehistoric. No such pottery is known from Mesopotamian excavations of the historic period'. Abu-Shahrain was the ancient Eridu, the seaport of prehistoric Babylonia. It was the home of Adapa, the first man according to Sumerian tradition, though in northern Babylonia the title was claimed by Lullu who seems to have been of Mitannian or Assyrian origin. In the later days of Babylonian history Eridu ceased to be a port, and consequently became merely a religious site. It was, however, still inhabited in the age of the Third Dynasty of Ur (2300 B.C.) and in the ruins of a house immediately beneath a pavement of Bur-Sin of that dynasty a lump of opaque blue glass was found. As Dr Hall remarks, this is possibly older than any Egyptian glass and is certainly earlier than any blue glass yet discovered in Asia.

The last chapter but one of the book is devoted to the excavations at Al-Ubaid. 'No previous visitor had noted the spot or had picked up any of the thousands of fragments of painted pottery, flint, chert, obsidian, carnelian and crystal flakes, disk-heads,

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nails and pegs, fragments of arragonite (alabaster) vases, inlay-plaques of arragonite and red stone, copper nails and so forth, which strewed the desert as at (Abu-)Shahrain', 'Maceheads of limestone, plain or veined, were found both at Shahrain and at Al-Ubaid, of the two types, pear-shaped and flattened spherical, which are both also found in Egypt, at Hisarlik, in Cyprus and in Italy'. Among the objects discovered on the spot, the most striking were the copper lion and leopard (or cat?) heads and the great relief of the winged Imdugud enthroned between two stags which is now in the British Museum. Al-Ubaid belongs to what may still be called the prehistoric period of Babylonia, the latest datable object being an inscription of Anni-padda the second king of the first dynasty of Ur (3000 B.C. or earlier) which was discovered there by Mr Woolley in his subsequent excavations on the site.

A. H. SAYCE.

FOUNDATION FIGURINES AND OFFERINGS. By E. DOUGLAS VAN BUREN.
Berlin: Schoetz and Co., 1931. pp. xvi, 81 and 20 plates. 40 marks.

Mrs Van Buren's monograph is a model of scientific work. It is at once methodical and exhaustive, and its wealth of references is astonishing. It may be regarded as a supplement to the author's volume on the clay figurines of Babylonia and Assyria since the figurines and offerings with which she deals in the present volume are also those of the same countries.

At an early period in Babylonia the clay image was reproduced in copper, the original stump or post upon which the figure rested taking a nail-like form. Mrs Van Buren is probably right in thinking that the post was primarily a representation of the reeds which formed the door-posts of the primitive Babylonian hut. Babylonia was a stoneless land, and to a large extent also a treeless one, and the clay house in it was preceded by a house of reeds. The figure which surmounted the post or 'nail' represented the guardian spirit of the place which protected the building and its occupants and kept watch over the door. In Sumerian times the spirit or *zi* assumed a human form, Sumerian religion being anthropomorphic, man having been made in the image of God, the deity also was naturally pictured in human shape.

The pre-Sumerian population had been animistic, and animistic beliefs accordingly survived by the side of the later intrusive cult. By the side of the figurines we find other foundation deposits which testify to this. The dog, especially in Assyria, sometimes makes its appearance as guardian of the household, while at times the human figure is partially clothed with a fish-skin, reminiscent of the days when the fisherman built his cabin amid the marshes of Babylonia.

The figurine itself assumed various forms in the course of Babylonian history. Before the age of the third dynasty of Ur, for example, we already find the *canephoros* who carries on the head the basket or 'carrying-pad' containing the bricks employed in the construction of a temple. In the religious ceremony which marked the foundation of the building the king himself as servant of the god headed the procession of bearers, a considerable number of whom, however, are represented by the figurines as women instead of men. In Assyria, again, which was a land of stone, the stone image tended to replace the clay figurine of Babylonia, the images, like those of clay, representing various deities and other supernatural beings and possibly also priests posing as gods.

For all who are interested in the subject Mrs Van Buren's monograph is so complete and at the same time so impeccably accurate that it is not likely to be superseded for many a day. The text is followed by a number of excellent photographs. A. H. SAYCE.

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THE CITY WALL OF IMPERIAL ROME : an account of its architectural development from Aurelian to Narses. By I. A. RICHMOND. *University Press, Oxford*, 1930. pp. xiv, 279, with 22 plates and 45 figures in the text. 42s.

Mr Richmond originally came out to Rome for quite a different purpose, but in the course of his work had occasion to examine part of the Imperial wall, which was then considered to be a comparatively simple structure. He noticed, however, some interesting points hitherto unrecorded, and eventually undertook the task of tracing the development of the wall in its entirety down to the end of the Roman period. The result is the present work, which completely revolutionizes our knowledge of the wall itself, and incidentally throws new light upon the military history of the Late Empire.

In place of the three periods previously recognized, Mr Richmond finds no less than eight. The wall began as a low structure, about 26 feet in height, with gateways of three standard types reflecting the relative importance of the roads passing through them. It was thus designed under Aurelian as a protection against marauding barbarians, rather than against a regular army equipped with the weapons of siege warfare. Against the latter it would not be effective until a later period—Mr Richmond thinks under Maxentius—when on the rampart-wall of the first period was built 'a mighty gallery, making a covered passage, provided with a varying number of loop-holes towards the country, and open arcades towards the city'; the height of the whole was thus doubled, the gateways of necessity all being remodelled, and two, *Portae Appia* and *Asinaria*, being entirely rebuilt. The next stage came under Honorius, when with the approach of Alaric certain of the gateways were strengthened, and the towers converted 'from ballista-casements into castles for archers'. After Honorius Mr Richmond distinguishes five further series of repairs, the most interesting being those of Belisarius in 547, which he identifies with the refacing in 'ill-selected blocks of tufa and peperino' to be seen, e.g., at points between *Portae Appia* and *Ostiensis*; and he ingeniously explains Procopius' phrase *ὅσον ἐς τριτημόριον τοῦ παυροῦς μάλιστα* (B.G., III, 22) not in terms of length, 'pulled down nearly a third of the wall', which is demonstrably untrue, but in terms of height, 'undermined it to nearly a third of its height'.

To the reviewer it is well-nigh incomprehensible that Mr Richmond should not have been anticipated in many of his discoveries. When once the difference is pointed out, it seems incredible that anyone should have failed to distinguish between the good brick-facing below the string-course of the wall and the indifferent work above; or have failed to notice the Aurelian merlons which at points remain incorporated in the curtain of period II; or have failed to see that the single-arched curtain of *Porta Ostiensis* East, for example, cannot be original. The evidence, by its very nature, has been there for all to see, yet to Mr Richmond must go the credit of having been the first to point out its existence. The question indeed must inevitably be asked how far similar methods applied to other equally famous monuments would produce equally important results.

The book is well written; everywhere fact and explanation are rigidly separated, so that in the unlikely event of the author's thesis being disproved by further discoveries, the work would still remain invaluable to archaeologists of the future, as giving an account of the wall as it now is, or rather, as it recently was, for necessary repairs are still being undertaken, and yet another 'period' is being added to the many through which it has passed. Misprints are few; I have noticed only one of importance; on page 251, line 32, for 'third' read 'fourth'. The photographs are good, and a series of isometric drawings of the gateways is excellent.

F. H. WILSON.

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THE ARTS IN EARLY ENGLAND. Vol. VI, pt. 1. By G. BALDWIN BROWN.
John Murray, 1930. pp. xi, 91 and 24 plates. 15s.

Professor Baldwin Brown's great work marches majestically on, and each instalment places us further in his debt; I fear it will soon be impossible to indicate, except with an excess of superlatives that he will not like, the extent of our respect and admiration for him. The first part of the sixth volume is, however, a book of modest length, and it looks a trifling thing when set beside its row of massive brothers; nevertheless I am glad that this collection of short studies has appeared separately, for the five single antiquities that it describes are all of them of more than ordinary interest, and the work has, in fact, a total value that has surprised even those who know what to expect from this distinguished author. The best thing in the book is strangely enough the appendix, for this contains fine illustrations and a full description of the Tassilo chalice; here Professor Baldwin Brown makes a point which I believe is new to everybody when he calls attention to the 'penetration' in the interlacing designs. It is a feature that is definitely not Irish, which is an important matter; but, otherwise, it is an embarrassing discovery, for though there is good reason for thinking the chalice an Anglo-Saxon work, we cannot claim this 'penetration' as a trick of English craftsmen in the late 8th century. Possibly our lack of comparative material is to blame here, but it is an uncomfortable fact that when 'penetration' does become common, it is in 9th century Scandinavia that it seems to have its home, and we need something beside the Tassilo chalice to indicate to us where the Vikings first saw this special little trick in interlacing design. I imagine that we shall have to search Carolingian MSS and metalwork for the source of this disconcerting feature.

The other objects discussed are the Stoneyhurst gospel (which was in last year's English Medieval Art Exhibition at the Victoria and Albert Museum), St. Cuthbert's portable altar, the Franks casket, and the Hackness cross. The author suggests that the gospel, which has a 7th century English binding, may have been taken from Bede's tomb and transferred to Durham by Elfrid Westoue (if it is really Bede's own book, of which he finished the translation on his deathbed, Stoneyhurst has one of the most precious relics in all England!); as to the altar, the view taken is that the wooden slab is the original portable altar of St. Cuthbert, while its silver plate is a subsequent embellishment added on an occasion when the tomb was reopened. The baffling description on this plate can then be read as the beginning of an honorific declaration to the effect that all the objects in the tomb were the possessions of the Saint. The Franks casket is the subject of the full discussion it deserves now that Dr Brøndsted has tried to persuade us that it was made in southern England and not in Northumbria (our author wins it back for Northumbria). The Hackness cross is also described in detail and well illustrated; but even with Professor Macalister's help it is impossible to make anything of the cryptic inscriptions, and, as we do not know when Oedilburga lived, there is still nothing left but the ornament to tell us how much older than 869 this cross may be. Professor Baldwin Brown deals rather roughly with the contour-lines of the griffins and with their diapered bodies in the course of his argument for an 8th century date; but the destructive argument here is a valuable bit of work and I am always glad when I see a trusted criterion of date under fire. So few of them can stand it.

T. D. KENDRICK.

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BOOKS RECEIVED*

OLD LONDON BRIDGE, by GORDON HOME; with an appendix on trade-cards and tradesmen's tokens, by AMBROSE HEAL; 61 illustrations in photogravure, and numerous black and white drawings from contemporary sources. *John Lane*, 1931. pp. 382. 31s 6d.

GEORGIAN ENGLAND, by A. E. RICHARDSON; a survey of social life, trades, industries and art from 1700 to 1820. *Batsford*, 1931. pp. 202, 261 illustrations. 21s.

THE WAY OF THE SEA, by HAROLD PEAKE and HERBERT JOHN FLEURE. [Corridors of Time, vi]. *Oxford University Press*, 1929. pp. 168. 5s.

THE SCOTS MERCAT 'CROSS', by W. G. BLACK. *William Hodge & Co.*, *Edinburgh and Glasgow*. 2nd edn., 1930. 2s 6d. [1st edn. reviewed in *ANTIQUITY*, II, 498].

HEBREWISMS OF WEST AFRICA—from Nile to Niger with the Jews, by JOSEPH J. WILLIAMS. *The Dial Press, New York*, 1930. pp. 443, 2 illustrations. \$7.50.

A BIBLIOGRAPHY OF THE WORKS OF J. B. BURY, by NORMAN H. BAYNES. *Cambridge University Press*, 1929. 10s 6d.

PROCEEDINGS OF THE SEVENTEENTH CONGRESS OF ORIENTALISTS, Oxford, 1928. *Oxford University Press*, 1929. 7s 6d.

LA BOHEME PRÉHISTORIQUE. I. L'âge de pierre, par ALBIN STOCKY. *Prague*, 1929.

THE PLACE-NAMES OF SUSSEX, by A. MAWER and F. M. STENTON, with the assistance of J. E. B. GOVER. *Place-Name Society*, 1929 and 1930. 2v. 40s.

THIS REELING WORLD, by FIRTH SCOTT. *Blackwood*, 1931. 7s 6d.

ARTISTS IN STRING, by KATHLEEN HADDON (Mrs O. H. T. Rishbeth). *Methuen*, 1930. 6s.

THE LAST GLACIATION, by ERNST ANTEVS. *American Geographical Society*, Research Series no. 17. 1928.

ROYAL COMMISSION ON HISTORICAL MONUMENTS (England). LONDON, vol. 5. East London. *H.M.S.O.*, 1930. 17s 6d.

ANCIENT CHURCH CHESTS AND CHAIRS in the Home Counties round Greater London, by FRED ROE. *Batsford*, 1929. 21s.

DIE BANDKERAMIK IN UNGARN, by FERENC V. TOMPA. *Budapest*, 1929.

VORGESCHICHTLICHES JAHRBUCH, band IV. Bibliographie des Jahres, 1927. *Walter de Gruyter, Berlin and Leipzig*, 1930. 45 marks.

THE MONUMENTAL EFFIGIES OF SUSSEX, by H. R. MOSSE. Specially compiled for brass-rubbers and church-visitors. *Cambridges, Hove*, 1930. 3s 6d.

INTRODUCTION TO REGIONAL SURVEYING, by C. C. FAGG and G. E. HUTCHINGS. *Cambridge University Press*, 1930. 7s 6d.

* The inclusion of books in this section does not necessarily mean that they will not be reviewed in a subsequent issue.—EDITOR.

Mr Robert Lynd—

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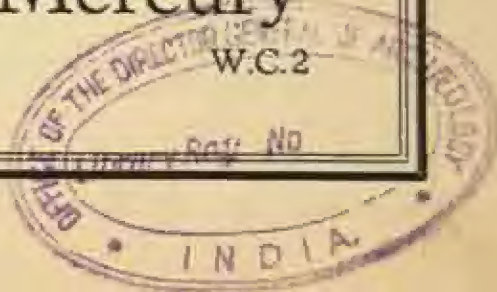
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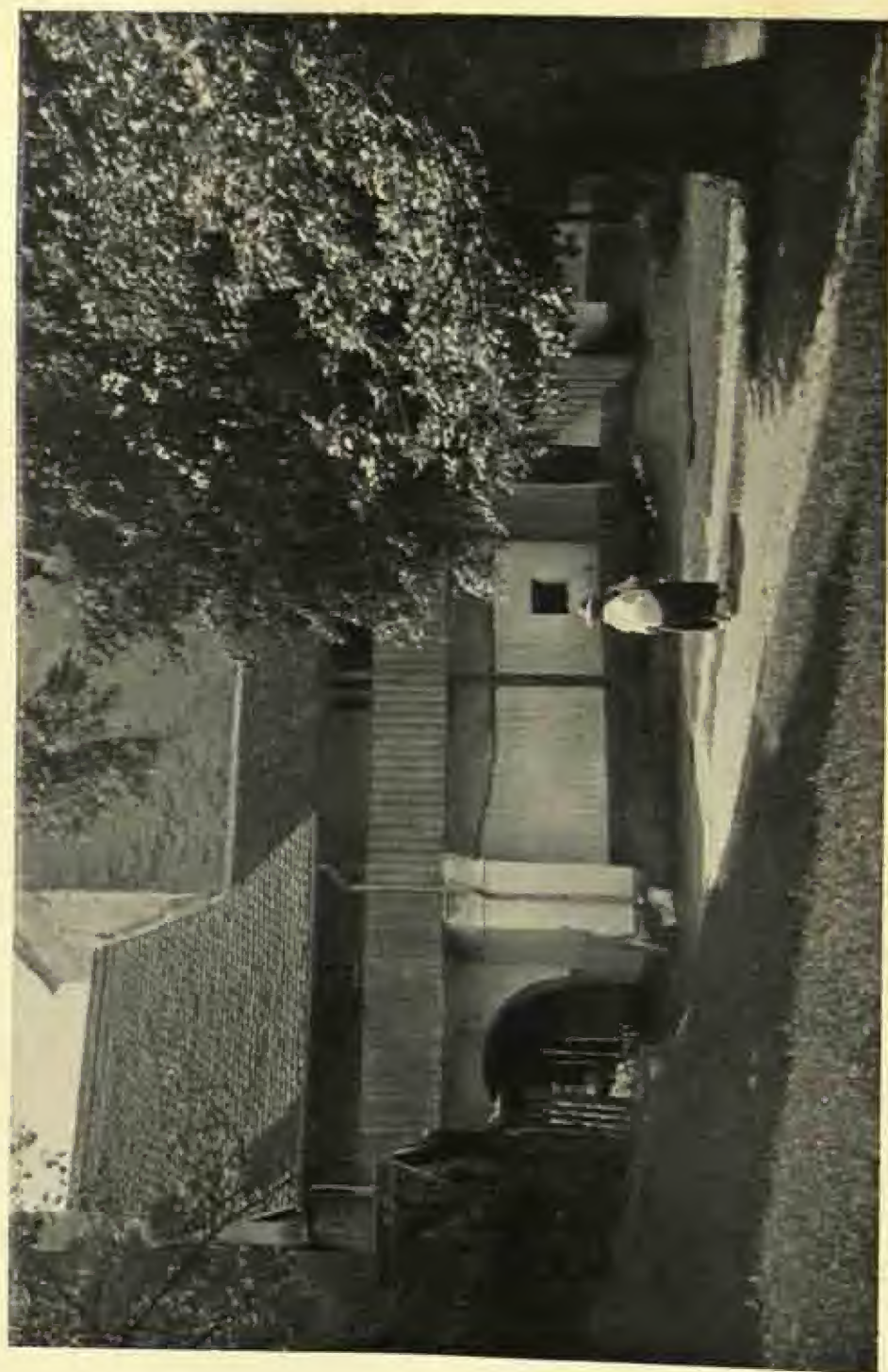
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IN TRANSYLVANIA
PA. O. G. S. Crawford

Antiquity

A Quarterly Review of Archaeology

VOL. V No. 20

DECEMBER 1931

Editorial Notes

FOR some time past these NOTES have been comparatively free from remarks about our domestic affairs. We have refrained for fear of boring our readers, and in normal times we should still refrain; but the times are not normal. For that reason we ask everyone to read what follows, as if it were a personal appeal from the Editors.



Economic difficulties and political struggles appear to those involved in them to be of immense and far-reaching importance. To live in times of 'Sturm und Drang' may be stimulating to the imagination, at any rate in moments of detachment; but it is not comfortable. This is merely a personal reaction, probably without much cosmic significance. But although we cannot help thus reacting, there is no need to lose our sense of values. After all there have been many eclipses of civilization in the past, and the ideas that really matter have survived. There have always been found ways and means of handing on the torch of knowledge, even through the darkest ages of history. Those whose business it is to contribute to the advancement of knowledge should not let themselves be stampeded by current events, however startling and personally unpleasant they may be.

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We who are responsible for ANTIQUITY do not intend to be stam-ped. The pursuit of 'useless' knowledge is none too easy in times of affluence; it becomes increasingly difficult when the screw is applied. This process exterminates the weeds; but it reduces the numbers and increases the burden of those who remain.



ANTIQUITY has survived five of the worst years in modern history. It has more than survived; it has grown in strength and vigour and has, we are told, 'become established'. We are glad to hear it, but we should like to know exactly what 'becoming established' means. It conjures up a pleasant vision of resting on one's oars and floating peacefully with the stream—of short hours and repose. Need we say that no journal can be produced on such lines at any time, least of all at the present? Nothing but unremitting personal effort suffices to keep ANTIQUITY afloat and abreast of the current. We have no publisher behind us, no staff to do the hack-work, no subsidy to fall back on (and incidentally to take the punch out of us).



Doubtless our old friends, the original subscribers, already know these facts; but there must be many new ones who do not realize the peculiarly individual free-lance character of ANTIQUITY.



We have no intention, now or ever, of appealing to motives of philanthropy. We claim to give 'good value for money' (a claim that our correspondence endorses); we expect ANTIQUITY to be bought and read only so long as it continues to be interesting and deserves to be bought and read. If it appeared that we were getting dull and losing support for that reason (of which there is not the slightest indication) we should not cast the blame upon our readers, but try and remove the cause. In small matters we have, in fact, greatly profited by friendly criticism.



In return we expect the support of all who approve of ANTIQUITY and its policy, and indeed we do get it in large measure, both from veterans and from the younger generation. The articles printed in the present number and the last prove this. We now ask all those

EDITORIAL NOTES

who read these words to remember that *never was the continuance of their support more necessary than during the coming year*. There are hard and anxious months ahead for all, not least for the Editors themselves. Every subscription, both old and new, counts—each one is appreciated and means more than perhaps the subscriber realizes. We are by no means in the last ditch, or even near it; when we are we shall say so, for we have always told the truth about our circulation. But we are not so foolish as to pretend that we have not suffered to some extent from the world-wide depression. Who has not?



We appeal very earnestly for this continued support, knowing as we do that during 1932 will appear some of the best articles we have ever published. So high indeed is the standard of archaeological and historical work today that there is little difficulty in maintaining our own. We have, for example, the promise of an article by a very well known man of science, describing a new test of racial affinity; of another on Seleucia, the former capital of Mesopotamia, recently identified by aerial observation; and of a third on the fortified churches of Transylvania. As a kind of appetizer we publish as frontispiece to this number a photograph we took inside the courtyard of one of these churches, which we visited last summer with the writer of the article.



In the foregoing paragraphs we have given a straightforward account of our present position and future policy. The nature of the response for which we ask will probably be obvious; but if any doubts should still remain they will be dispelled by the concluding note, which we hope will be read carefully and acted upon.



VOLUME VI (1932)

Inserted in this number is a renewal form for subscriptions for 1932, and we shall feel much encouraged if our subscribers will make a point of returning this with as much promptitude as they may find convenient. This would be an immense help and save unnecessary expense in having to repeat requests for payment. It will also enable

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us to make with more confidence certain arrangements for our printing order for next year.

There are other ways in which subscribers can help. For instance, they may have friends who would be interested to know of ANTIQUITY and we shall be only too pleased to send particulars, or a specimen number, to each one whose name is suggested. Appeals of this kind have always had favourable results.

The forms mentioned above have been omitted from copies sent to subscribers who have paid in advance or who make their payments through banks.



On the third page of our Cover is printed a list of Articles in certain issues of ANTIQUITY of which we have surplus copies and therefore are able to offer for THREE SHILLINGS each, post paid. As the number is not large we may have to withdraw this offer at an early date.

The Gods of Phoenicia

as revealed by the Poem of Ras Shamra

by CH. VIROLLEAUD¹

formerly Director of Antiquities, Syria

READERS of ANTIQUITY are already² aware that the second campaign at Ras Shamra—that of the spring of 1930—brought to light several new Phoenician texts. Amongst these pride of place must be given to ten fragments representing in all about a thousand lines of a kind of epic poem, whose various scenes are all laid in the world of the gods. The fragmentary state of the poem increases the difficulties of interpretation, which in any case would have been considerable; nevertheless, by means of the careful analysis of certain episodes we can now form some sort of general conception of Phoenician mythology as it was about the time of the Ramessids and Amenophis (*c.* 16th–13th cent. B.C.). In the present article I propose to give a summary account of the results of my researches in this direction.

The gods and goddesses thus brought to life again are more than fifty in number. But two stand out from amongst the rest, and these two are precisely those whom one would expect to find holding higher rank in a document emanating from Phoenicia—El and Baal.

The word El means 'god' in Phoenician as in all Semitic languages. When El is accompanied by another word it signifies some individual god; for example, *el mtm*, the god of the dead. But when El is met with standing alone, it means God, the supreme god, father of gods and men. El is an old man; he is called *mlk ab anm*, the king, (*melek* or *molek*), Father of Years, that is, the old king. And one can then realize why in Roman times El was compared, if not identified, with Kronos.

¹ This article has been translated by the EDITOR.

² See ANTIQUITY, Dec. 1930, IV, 460–466, and particularly p. 464.

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El lives not in heaven but in a field, the *sad El* or field of God, which is called also *sad Elim*, the field of the gods. This field is situated near the seashore, at the place where the rivers flow out into the ocean. With him live there several other persons, the most important of whom is a goddess called *Ashérat iam*, the Ashéra of the sea; *Ashérat* is that old Canaanite word which has the same general sense as *elat*, goddess; it appears, moreover, that the Ashérat of the sea is identical with Elat, the goddess par excellence, the wife of El.

Thus the field of god or of the gods seems to be a region adjacent to the land of men. But this field lay *above* the world below, for it was necessary to descend (*ird*) in order to pass from this paradise to the world itself. For the moment it is impossible to define the position of *sad El* with greater precision; one imagines that the Phoenicians themselves had quite vague ideas about it, and that those ideas fluctuated considerably in the course of centuries, in proportion as the bounds of the known world retreated before the discoveries of their navigators. In any case we cannot fail to compare this field of the Phoenician gods with that field, or fields, where dwelt the gods of ancient Greece, situated in an equally indefinite region and well known to us under the name of the Elysian fields.

On the other hand, in oriental mythology there is a person who, though doubtless not the supreme god, himself too lives in a 'distant' region of which little is known except that, just like the Phoenician *sad El*, it lay 'at the mouth of the rivers'. This person is an old man having several different names, of which the oldest is Hasisatra, transformed by the classical mythographers into Xisuthros. Xisuthros has long been compared to the mysterious El Khadir² of Muslim legends who also lives by the seashore and whose name is actually derived from Xisuthros, which in turn comes from Hasis-atra. Now it is a remarkable fact that in no part of the Muslim world is the hero El Khadir held in such esteem as amongst the Alaouites (formerly called the Nosairis), that is to say, amongst the inhabitants of the very province of Syria in which Ras Shamra is situated; so much so that El Khadir, whose fame is still so lively, has many points of close resemblance to El, the old god of those northern Phoenicians who occupied the land of the Alaouites 3000 years ago and more.

El, as we have just seen, is the supreme god, or the Father of the

² Popularly known by the name of the Old Man of the Sea.—ED.

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Gods. He is represented as a king, and an old king, not merely as a man old in years. He is a man, but a man of great stature, or rather of unwieldy bulk, since his hand is said to be as great (literally 'long') as the sea.

This old man, moreover, seems to be tending towards his decline. It is said that his hand trembles and his sceptre wavers. True, he is still consulted, especially when a new king has to be chosen; but it is not normally his advice which carries most weight. His decisions are discussed by his *entourage*, and particularly by the goddess (or Ashérat) of the sea, who is doubtless his wife. The god is obliged, in fact, to pay great heed to the advice of the goddess, and eventually he falls into line without much argument.

But of all the opponents of El, the most aggressive is a younger and more enterprising god, who openly tries to supplant him; he is called Baal, that is to say the Master. This conflict, which assumes many different forms, appears as the essential theme in our epic.

Thus there are set in opposition to each other two opposed forces, or two principles, or simply two persons; and here one must compare Phoenician mythology with other myths of antiquity, and more especially the Phoenician Baal with, on the one hand, Bel-Marduk at Babylon and on the other with Zeus. Moreover the ancients, whose knowledge in this domain undoubtedly reached back further than ours, said that Belos or Baal was Zeus, whilst, as we have seen, El was confused with Kronos.

To speak accurately, Baal is never seen in direct combat or in personal conflict with the old god El. It is rather El who assumes the offensive, doubtless as being the best means of defence; and his method of attack is to incite against Baal fantastic creatures whose description, summary though it be, recalls certain passages in Ezekiel.

These beings, the creatures of the gods, bear the name of *aquim*; they have horns like bulls; they are as big as the *abbirim*, and they have faces like Baal. Thus there are set in opposition to Baal beings who resemble him at least in face, and who are formidable and doubtless numerous, whilst Baal is alone, or is attended by a single comrade only, called Ben Dagon, the son of Dagon.

The Story of the Combats, or rather the Hunting, of Baal, as it is called, is unfortunately not well preserved. Sometimes it is Baal who wins; but, in other encounters it is the *aquim*, who are also called the *okelim* or devourers. It even happens that Baal is overcome and falls like the bull beneath the sacrificial knife. Surely

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one day Baal will finally triumph, but the state of the text does not allow us to say in what circumstances.

However, while the Story of the Hunting of Baal is very incomplete, we possess on the other hand important fragments of a somewhat parallel story describing various incidents in a struggle between two beings, one called Mot and the other Aleiôn or better (without doubt) Aleiôn. The name Mot is generally accompanied by the expression 'the son of the gods', whilst Aleiôn is the son of Baal. Whether by chance or otherwise, this episode or series of episodes relating to Mot and Aleiôn occupies most space in the Poem of Ras Shamra. Mot is in some way the champion of God or of the gods, whilst Aleiôn defends the cause of Baal his father; moreover Baal constantly intervenes in the struggle in favour of his son, and sometimes even, as we shall see, takes his place in the fight against Mot.

Mot and Aleiôn are then both of them sons of gods and of the two greatest gods. They are undoubtedly gods themselves, at any rate in part; they are in any case much more closely related to humanity than are the other gods, since they and they alone amongst the gods are both of them subject to death. When one disappears the other supervenes; the newly arrived is regarded as having killed the departed. The life of the world, not that of men only but also that of the gods, is bound up with these alternating deaths and resurrections of Mot and Aleiôn.

The name Aleiôn tells us nothing about the nature of this person, for it is—or appears to me to be—inexplicable. But we know that Aleiôn rules over clouds, winds and rain, and also that he is accompanied by a troop of wild animals, amongst whom are eight boars. Aleiôn is in short the god of the air, of that transitional region between earth and heavens where are developed the agents which fertilize the soil—that nourishing soil which is personified by Mot, the son of the gods.

The name Mot, on the other hand, is perfectly clear; and even if we did not know what those two letters *mt* stood for in Semitic languages, the meaning of Mot would have been explained by a passage in Philo of Byblos. He was a writer of the 1st century A.D., who composed a history of Phoenicia in Greek, using old documents attributed to a Phoenician priest or philosopher called Sanchoniathon; and this Sanchoniathon lived about the time of the Trojan War, that is to say at the very time when the Poem of Ras Shamra was composed.

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Philo of Byblos relates that the god Kronos had had, amongst the other children of his wife Rhea, a son who died prematurely and who for this reason was called Mouth or Thanatos (death); and the Phoenicians, adds our author, also called this son of Kronos Pluto; this amounts to saying that the Phoenicians of Roman times identified Mot or Mouth with the Pluto of Greek mythology. Pluto is the god of the underworld but also the god who brings forth the plants, fruits, corn—in a word life and wealth.

Now the activity of the nourishing soil is constant and continuous; once the harvest is over and the corn reaped, once Mot is dead, long months must elapse before we shall see the earth budding into green again. This great change can only be brought about if the water of heaven fertilizes the soil; and it is Aleïôn who is to perform this miracle. Life, is, in fact, the outcome of cooperation between Mot and Aleïôn. But this cooperation has nothing friendly about it, as I have already indicated. We shall see this better still from certain instances; and we shall at the same time realize that the nature of the two persons is more complex than it seems at first glance. Here, for example, is a characteristic episode.

Aleïôn, son of Baal, is dead. We do not know how he died, for the opening portion of the tablet has not yet been found. But the fact is that Aleïôn is dead and that the whole of Nature is suffering from his disappearance. But the gods know well that it was Mot who killed Aleïôn; and the sister of Aleïôn, the goddess Anat, is directed to charge him with it and demand satisfaction. Anat goes then to find Mot; she first looses two dogs against the calves and lambs which Mot is herding; then she seizes Mot himself and cries 'Give me back my brother' (*at mt tn ahi*; literally, 'Thou, Mot give [me] my brother'). Mot replies, feigning surprise 'What are you asking for?' He must however have been well aware that since the disappearance of Aleïôn, the breath of life no more inspires the sons of men; the desert encroaches on the sown, and already wild beasts prowl round the outskirts of the towns. Then Mot suggests that the goddess Anat should go and search for pitchers down even into the bowels of the earth. For there are two kinds of pitchers which contain a marvellous liquid by virtue of which the parched earth will be transformed into a verdant plain. Maybe that he, Mot, is not, like Aleïôn, the lord of the waters of heaven, yet will he go and draw from subterranean sources other waters which will perform the same task; he thinks so himself at any rate, and he would like it to

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be so thought. And when he shall have accomplished this, he too will be an Aleïôn. He will have achieved his purpose of dispossessing his rival ; he will be entitled to the same honours, and already he invites the goddess Anat to make everything ready against his return in triumph.

But the gods, guardians of the established order, will not have it so. The goddess of the sun, who is called the Torch of the Gods, comes and announces their decision. Mot is not to try and transpose their parts, or rather to absorb the individuality of Aleïôn. He shall remain what he is ; he shall keep his own personal property—which consists of the plains ' without heavens ', that is to say (in the extremely elliptical style of Ras Shamra), the plains deprived of the water of heaven.

It seems to follow from this simple expression that Mot is not, as one might think, the god of verdant vegetation, but rather the god of the ripe ear. He is the god of autumn, or of summer and autumn, and not of spring. It is Aleïôn who is the god of spring, or of winter and spring. The sequel fully confirms this impression. The gods, in fact, having delivered their judgment, Anat throws herself afresh upon Mot. But she no longer asks him questions ; the time for words has passed ; the sentence is to be carried forthwith into execution, and by the hands of Anat herself. The goddess takes possession of Mot and cleaves him in half by a stroke of the sickle ; she then puts him in a sieve and forthwith casts him upon the fire, doubtless to purify him more thoroughly. Finally, she grinds him between the upper and the nether millstones and scatters his remains over the field ; and she does all this in order to eat his flesh.

Of these five operations, the first four belong to harvest itself, whilst the fifth relates to sowing. Mot is not only the ear that is ground to make bread thereof ; he is also the grain of corn that is stored up, and which contains in its frail sheath the germ of future harvests.

Thus Mot who killed Aleïôn is killed in his turn. But Nature cannot live thus deprived of direction ; and in fact the rebirth of Aleïôn is not long delayed.

In a dream a person called Tapho, whose character is not clearly defined, receives a message from the gods that Aleïôn has come to life again : ' Good news ' he is told, ' Aleïôn lives : and now the rain of heaven is about to fatten the earth, whilst the rivers come down in wine '. Tapho rejoices exceedingly ; he laughs and utters cries of joy, and in his excitement he snaps his fingers.

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However, if Aleïôn has come to life again, no one yet has seen him, not even Tapho. Uneasiness fills the hearts of men and even of the gods too : ' Where is Aleïôn ? ' is repeated on all sides. ' What has become of the son of the Baal of the World ? '

Then the god El orders the goddess of the sun to find out the place where Aleïôn is in hiding, or perchance the prison where his enemies have him fast. The sun, who sees all, should succeed where others might fail. He (or rather 'she', for the Sun is a goddess) goes then in search of Aleïôn; and surely she finds him—but the condition of the text does not allow us to say how these things happened.

Shortly afterwards—a year later—the contest begins again no less energetically than before. It is the same struggle, but it is told in other words, for the years are not all alike even in these eastern lands, where however the seasons are sharply divided from each other. It is now no longer the sister of Aleïôn who attacks Mot; it is no longer Aleïôn in person, it is his father Baal himself. Mot is thrown to the ground, his throne is upset, his sceptre broken; this time he will remain seven years without reappearing. This long absence doubtless corresponds with a period during which men suffered peculiarly severely, a period of lean kine.

From year to year and from century to century the struggle becomes more bitter. Baal continues to fight in place of Aleïôn, until the day when he falls upon Mot after the fashion of a wild bull with lowered horns; he bites him like the wild bulls of Bashan. Mot implores help from his father, but in vain. The sun in fact reveals to him that his prayer has not been heeded and that he must die. Then Mot, vanquished, and abandoned by his own people, goes down into the earth to the Lower Regions, to the god of the dead.

But this struggle does not consist merely of a series of incidents repeated indefinitely. It has a limit; it concludes with the victory of one of the two opponents; and the conqueror is quite obviously Aleïôn the son of Baal. A whole canto of the Poem—containing 500 lines, a third of which is preserved—was devoted to this victory or exaltation of Aleïôn. At the outset he is greeted with the title of king. Mot doubtless was a king too, for his sceptre and throne are spoken of; but it was not said of Mot, as of Aleïôn, He is 'our king' or even 'our judge' (or more precisely 'our chief magistrate'). God, the god El, grants Aleïôn, in response perhaps to a request, wisdom

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(*hokmot*) and also, it appears, knowledge—the knowledge of the life of hidden things, if I understand correctly.

The goddess Ashérat prepares the throne of Aleiôn with her own hands; then she sits down on his right, and they eat and drink together. A magnificent palace (or temple, *hekal*) is built for Aleiôn, and amongst the materials which enter into the construction of the building are cedars of Lebanon (*arx Lebanon*); and presents of gold and silver pour in from every direction. For seven whole days there are sacrificed bulls and fat sheep and also rams and one-year-old calves, and portions are distributed to the assembled multitude. Next, the seventy sons of the goddess Ashérat sing a hymn in honour of the gods and goddesses; and Baal, seated in the throne-room, says to his Son: 'Lo, I have given thee (all) the kingdoms of the earth; in future evil shall not overcome thee'.

No one, indeed, it seems, will ever come to disturb the peace of Aleiôn, not even Mot, his ancient enemy who has given up the struggle.

Moreover, before departing—that is to say, before returning to the lower regions—Mot admits defeat, if not openly then at least in his heart. 'Now', he says, 'there is someone (he plainly means Aleiôn but avoids mentioning his name) who will fatten gods and men and make the desert green again'.

The contest between Mot and Aleiôn which occupies the first part of the poem is clearly an agricultural myth; but the second part, the exaltation of Aleiôn, is less easy to explain. Mot, we have seen, had tried to displace Aleiôn and had failed. Aleiôn on the other hand, thanks to the constant support of his father Baal, had reduced Mot to extremities and in future would hold undisputed sway. Perhaps we may see in this second act an attempted explanation, no longer of life itself but rather of the origins of society.

Mot is not only the symbol or spirit of vegetation. He is a shepherd and according to one passage an agricultural labourer; he lives in the country. Aleiôn, on the other hand, lives in a town; he builds or has built for himself a palace, and in it he amasses a great accumulation of wealth. The gods grant him wisdom and knowledge, and he—or more precisely one of his supporters called Dan-El—will make the best possible use of these gifts, undertaking the defence of the oppressed and doing justice to the widow and the orphan.

Moreover, in the writings of Philo of Byblos there are two persons named Hypsouranios and Ousôos who are themselves also brothers

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at enmity with each other. Hypsouranios was reputed to have built the first houses, whilst Ousôos lived in the country clothed in the skins of animals. It is another aspect of that secular strife which still obtains in certain lands, the strife between nomad and settler, between Mot and Alcîôn. There would (or will) be many further points of contact to be established, or at least suggested, between our poem and Philo of Byblos, although the fragments of Philo are for the most part concerned with cosmogeny, and although the cosmogeny of Ras Shamra has not yet been found. It will also be necessary to compare the legend of Mot with other Phoenician legends, long though imperfectly known, especially such for instance as the famous legend of Adonis. And it is worth while enquiring whether this document, found in the extreme north of Phoenicia—and indeed somewhat beyond the frontiers of what has hitherto been regarded as Phoenicia—whether this document, certainly composed at Ras Shamra, represents merely the actual traditions of that town, to the exclusion of those of some other place or region.

It is a legitimate inference from certain facts, and notably from certain geographical allusions, that the Phoenicians of Ras Shamra originated in the south, and that Ras Shamra itself was a colony—one of those offshoots which the great cities of Phoenicia proper founded practically all over the Mediterranean, on the Syrian coast as elsewhere, probably before others. Doubtless one should not be surprised to find in the Poem of Ras Shamra either the name of Lebanon or the cedars of Lebanon or the springs (or more precisely the wells) of Lebanon; for although Ras Shamra is not situated right at the foot of Lebanon, it is known that the fame of this mountain range and its forest extended afar and goes back to a remote antiquity.

But if these traditions of Ras Shamra are really to be regarded as peculiar to northern Phoenicia, it would be difficult to explain the occurrence in our poem of a name like that of the land of Bashan. We have seen, indeed, that Baal kills his enemies after the manner of the *basanim*; and this word is most probably used to describe the formidable beasts, so familiar from the Old Testament, which inhabited the land of Bashan, a region beyond Jordan to the northeast of the Lake of Tiberias and forming the hinterland of Tyre. Further, it appears that, in spite of a slight epigraphic uncertainty, the name of the town of Ashdod occurs once, associated with the name of the desert of Kadesh. Now this desert lies to the south of Palestine, and Ashdod was one of the five cities of the Philistines, on the Palestinian

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coast above Jerusalem. Finally, in a list of different kinds of wines offered to the gods in certain ceremonies, there is mentioned the wine of princes, *in seranim*. But *seranim* does not mean princes generally; it is a title exclusively reserved, at any rate in the Bible, for the 'lords of the Philistines', for the rulers of the land nearest to the land of Canaan, and especially to Tyre, which lies 250 miles south of Ras Shamra.

These, of course, are still merely stray hints. The theory of a southern or Tyrian origin of the Ras Shamra traditions will need to be confirmed by the discovery of many more Phoenician tablets; and there are many other riddles that can only thus be solved. But even if the investigations now being conducted at Ras Shamra by MM. Schaeffer and Chenet should not be rewarded by the discovery of fresh documents, it is no exaggeration to state that those which we already possess form the most important epigraphic evidence that Syria has yet produced; and, not only for the history of ideas and beliefs but also for linguistics, to say nothing of the new and wholly unexpected light thrown by these tablets upon the origin of the alphabet.



1. BEAKER FROM FELIXSTOWE
By permission of the British Museum



2. BEAKER FROM THE
DUTCH 'HUNEBED', EXLOO, DRENTHE

The Dual Character of the Beaker Invasion

by J. G. D. CLARK

IN his classic work on the Bronze Age pottery of Britain the late Lord Abercromby adopted the old division of the class of beaker pottery into three types originally proposed by Dr Thurnam as far back as 1871. In order that Abercromby may not be misrepresented I propose to quote the essential portions of his definitions. In type A, the 'high-brimmed globose beaker', 'the body is more or less globular; the upper part, separated from the body by a constriction, frequently very defined, spreads out like the calyx of a flower and forms a brim or neck that almost equals the body in height. The sides of the neck or rim . . . are straight and not recurved at the lip'. In type B, the 'ovoid beaker with recurved rim', 'there is no distinct demarcation between the body and the rim, but the one glides into the other by a gradual curve'. Finally type C, the 'low-brimmed beaker', 'may be regarded', in Abercromby's own words, 'as a debased variety of our first type'.

It should be clear already I think that in labelling his types A, B, and C Abercromby has given the false impression that we have three types of beakers, whereas what we really have are two types, of which one has a 'debased variety'. We therefore suggest that a less misleading classification would be, for instance, $\Lambda(x)$, $\Lambda(y)$, and B. This may seem a trifling point but we believe it has helped to obscure the proper recognition of the true dual character of the Beaker invasion of this country. We propose to substantiate the validity of our suggestion in the course of this short paper.

The division of the beaker pottery into types has in the past been based primarily upon the criterion of form, and we will examine this first of all. From Abercromby's definition it is clear that in the possession of a constriction, often marked, between the body and the neck of the pot, his types A and C share a characteristic essentially alien to type B, which in turn is alone in the possession of a recurved rim. The types A and C are thus both positively and negatively associated

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together in opposition to type B according to the criterion of form. As a further proof of the essential solidarity of the group which we shall henceforward call A+C we may point to the large number of pots which Abercromby found himself compelled to class as AC, in which the constriction lay rather higher than in A and rather lower than in C. The series A, AC, C is thus a continuous one.

The second criterion which must be considered is that of decoration. Here again we find that types A and C form a compact group in distinction to type B. In general style the rich and often rather heavy ornamentation of the first group is contrasted with the simplicity amounting almost

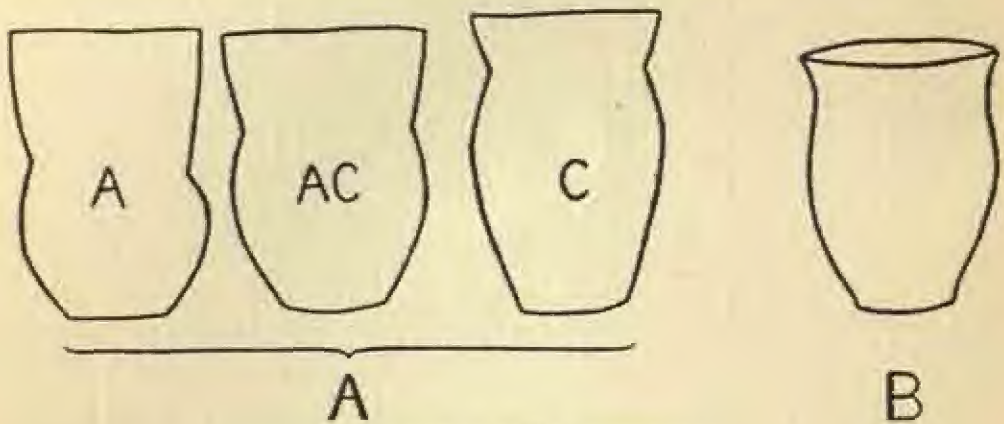


FIG. 1. TYPES OF BEAKER POTTERY*

to poverty of the decoration found on beakers of type B. Whereas the former employ often on a large scale such designs as negative and positive triangles, hexagons, chevrons, lozenges, lattices, etc., the latter is content for the most part with plain horizontal lines, occasionally enclosing oblique or criss-cross hatching, with a rare use of the linear chevron and the triangle, together with crude stab or finger-nail ornamentation.

The evidence of the pots themselves therefore leads us to the conclusion that we are dealing with two main groups of pots, the A+C and the B. It must however be pointed out that small variations can

*The type 'B' embraces a multitude of variations in form of which only one is shown in the diagram. All however partake of certain fundamental characteristics which lend some sort of unity to the group.

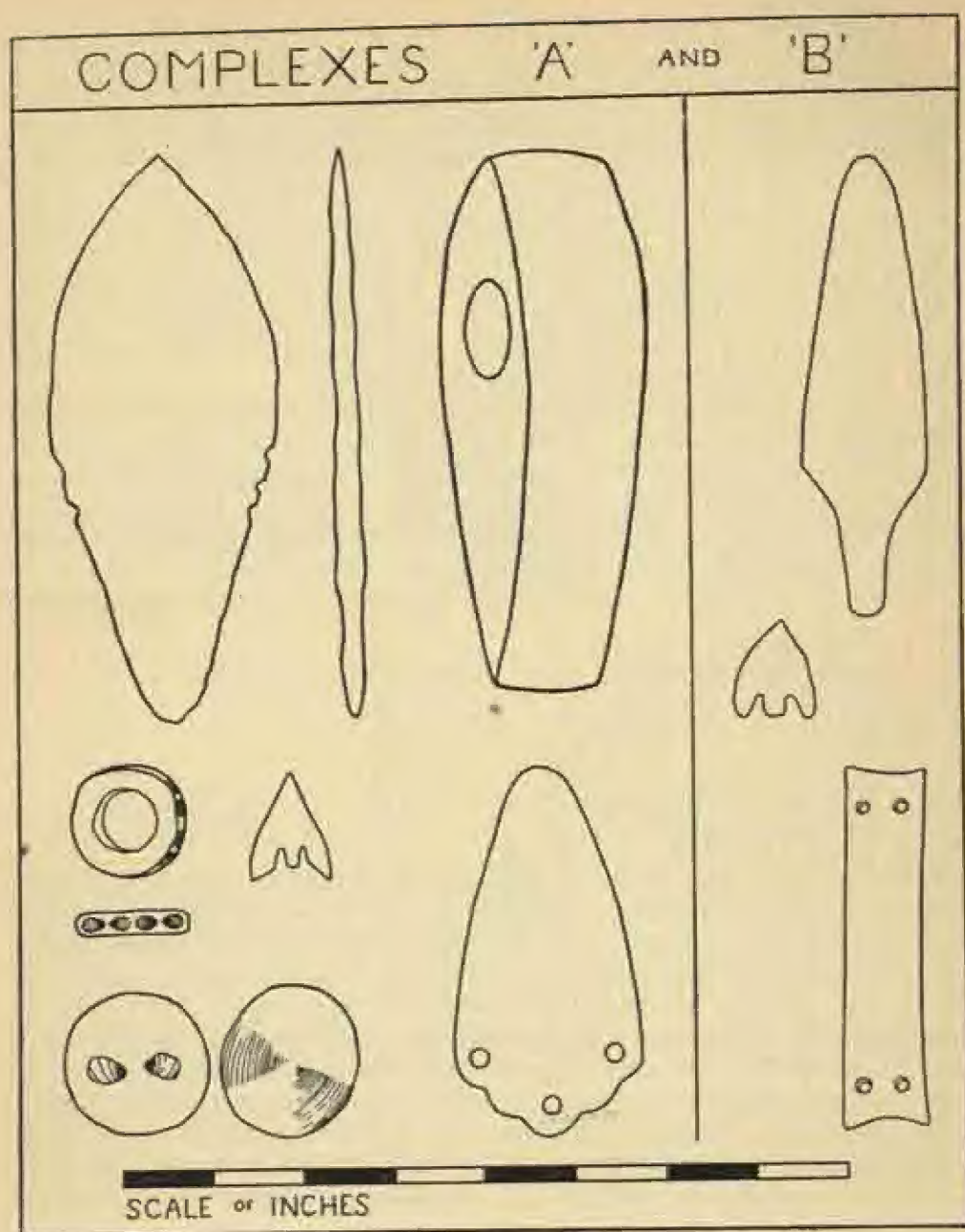


FIG. 2.

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be noted in the c type of pot, which Abercromby rather rashly perhaps ventured to describe as 'debased'. If we imagine the group A+C as a continuum over the British Isles we can note in the northern half a growing tendency for the constriction to move up nearer the rim, a tendency accompanied by certain departures in the method of decoration. Thus we may note a general tendency to a greater neatness, a toning down of the boldness seen in the south, together with the appearance of new motives such as that found rather unexpectedly on the pot from Bath road, Felixstowe,¹ but commonly in the East Riding of Yorkshire and Scotland. We do not propose to enlarge upon these northern beakers, as we are mainly concerned with the arrival rather than with the subsequent development of the beaker pottery.

There is however another line of enquiry which leads us to the same general conclusion. If we consider the cultural objects associated directly with beaker pottery we shall find further support for the belief that in the beaker invasion we have to trace two main currents. Perhaps the position can best be appreciated by indicating in a table the grave-goods found with the two types of beaker respectively:

	A plus C	B	Hybrid
Flint daggers	8	1	1
Stone axe-hammers	4	—	—
V-perforated buttons	8	—	—
Rivettted metal daggers	5	—	—
Bracers	—	4	—
Tanged metal daggers	—	4	—
Flint arrowheads	3	2	—

It is thus fairly clear that the grave-goods of the two groups of pottery differed very materially. Apart from the flint barbed and tanged arrowheads which occur with both types, the principal objects found in the graves of the beaker invaders separate themselves decisively into two groups corresponding with the A+C and the B beakers respectively. The clarity of the evidence is all the more amazing when we consider that in many areas such as the Yorkshire Wolds and the Wiltshire Downs the two types of beaker are found intermixed; indeed the remarkable way in which the two culture complexes can be distinguished almost inclines one to the belief that there must have been a slight chronological difference in the date of their arrival. However

¹ Ipswich Museum, no. 1920.

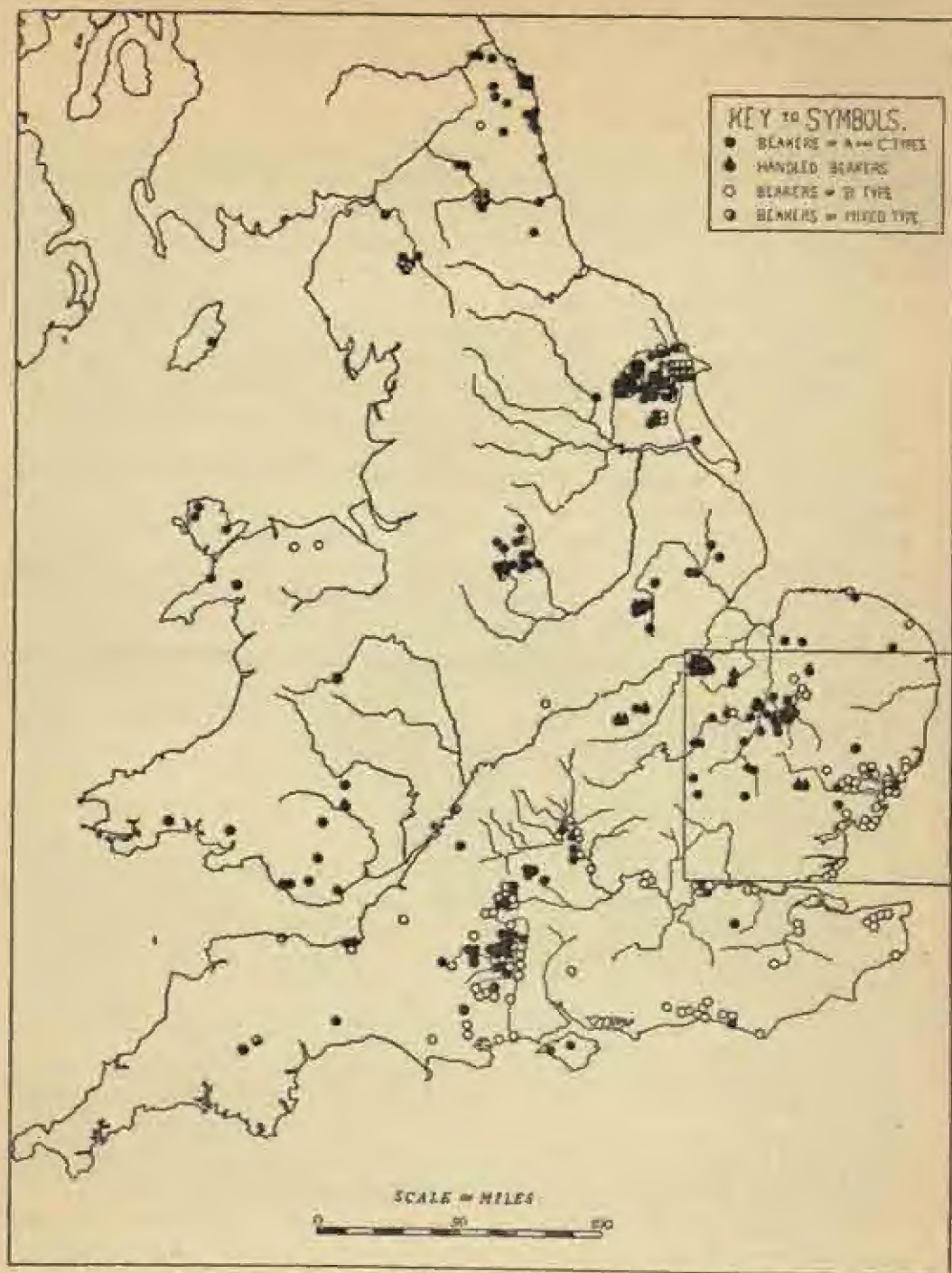


FIG. 3. DISTRIBUTION OF THE TWO TYPES OF BEAKER POTTERY

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this may be it seems clear that while we may associate the flint dagger,² stone axe-hammer, button and 'pulley ring', and rivetted metal dagger specifically with the A+C group of beakers, we may regard the bracer, and the tanged metal dagger as traits of the B group.

Now, if our assumption that the beaker culture penetrated this country in two distinct groups is correct, we might expect by plotting on the map the pots of either type to obtain some geographical confirmation, since it is highly unlikely that the distribution of two distinct complexes would be identical. Turning to our first map (fig. 3), which shows the distribution of the two groups respectively over England and Wales, certain glaring differences can be instantly noted; thus whereas the A+C type is found commonly around the borders of the Fens, on the Derbyshire limestone, in Northumberland, South and Northwest Wales, the East Riding of Yorkshire, and on the Wiltshire Downs, the B type is found in any numbers only in the southeast of the country, notably on the Suffolk and Essex coasts, up the Thames, in Kent, on the South Downs, and in southwest Hants, Dorset, and Wiltshire. Certain areas such as the Wiltshire Downs, and to a lesser degree the East Riding and the Thames Valley, show numbers of both types, but on the other hand the Derbyshire-Stafford group in which 16 out of 18 beakers³ are of the A+C type, and the South Down⁴ group, of which 10 out of 11 are B beakers, are good instances of the discordant distribution of the two types. Applying the magnifying glass in the second map (fig. 4) to the area enclosed on the first, we can study this discordancy in part of East Anglia at closer quarters. The reason why the two groups have in this area remained fairly distinct is probably to be found in the barrier of forest-bearing boulder clay which crosses the area diagonally. In this map an attempt has been made by shading vertically the clay forest lands, and horizontally the areas now covered

² A flint dagger was found at Lockeridge, near West Overton, Wilts, with a beaker of the B group. *Wilts. Arch. Mag.* XLIII, 395-6. This area is one in which both complexes are found richly, and cases of intermixture might be expected.

³ The following A+C beakers come from the area: Green Low, Alsop Moor; Smerrill Moor; Grind Low; Haddon Field; Bee Low; Slipper Lowe, Brassington Moor; Monsel Dale; Rusden Low; Stakor Hill, Buxton; Dowel, Sterndale; Minning Low; Blake Low; Eastern, Wetton; Stanhope; Top Low; Mouse Low, Deepdale.

In addition two 'mongrel' beakers have been recorded, belonging to Abercromby's 'hybrid variant AB': Stanhope; Gospel Hillock, Cowdale.

⁴ The following B beakers come from the area: Cissbury (2); Downs northeast of Shoreham; Kingston by sea; Burpham; Wolstonbury; Devil's Dyke; Falmer; Belletout, near Eastbourne; Heathery Brow between Telscombe and Southease.

The solitary A beaker was found at Telscombe.



FIG. 4. DISTRIBUTION OF THE DIFFERENT TYPES OF BEAKER POTTERY IN EAST ANGLIA ON A GEOLOGICAL BASIS
The symbols are identical with those on fig. 3

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by alluvium to present a picture of the sort of vegetation natural to the area. In making any kind of mental picture from this map however it must be remembered that areas such as the coastal strip of Essex and southeast Suffolk, and the Fens, now covered with alluvium, were in the beaker period partly habitable areas, since we know that both the Fens and the Essex coast have sunk since beaker times. Interesting confirmation of this fact has recently come to light in the Cambridgeshire Fens, where a site occupied by people of beaker and early Bronze Age culture has been found below present sea-level and under peat. In spite of this reservation however the control of the forest areas on beaker settlement seems to have been almost complete. Consequently invaders landing for instance on the fen-borders of the Wash would have difficulty in reaching overland the Essex coast and *vice versa*. For this reason the area is a good one for testing the hypothesis that in the beaker invasion we have to deal with a dual phenomenon. A glance at the map will show us that whereas the great majority of the A+C pots come from the northern side of the boulder clay barrier, the B beakers come almost entirely from the south side.

A second geographical confirmation of our general hypothesis can be found in the study of the distribution of objects other than pottery known to belong to one or other of the two complexes. Thus if we take the flint dagger, assigned to the A+C group on the evidence of grave-finds, we shall see that its distribution tallies closely with that of A+C beakers and differs from that of B beakers. To illustrate this we can cite the case of the limestone area of Derby and northeast Staffordshire, in which 16 A+C and 2 mongrel beakers have been found; here no less than 7 flint daggers have been found. The South Downs of Sussex however, which produced 10 out of 11 B beakers, have yielded only one dagger—and that a fragment—of certain provenance, though the area is very rich in flint-work. Taking the area shown in our second map we find daggers plentiful round the edge of the Fens, the territory of the A+C beakers, and rare on the Essex and Suffolk coast. Or again we may consider the rivetted metal dagger of the type found with the A+C group of beakers.³ Whereas the Derbyshire and northeast Staffordshire area yields no less than 19 specimens, the South Downs have yielded none at all. Likewise in East Anglia the few examples that have been found all derive from the territory of the A+C beaker. In passing we should like to hazard the suggestion that the rivetted

³ Dr Cyril Fox and W. F. Grimes, *Arch. Camb.* 1928, pp. 137-74.



FIG. 5. DISTRIBUTION OF FLINT DAGGERS OF BEAKER TYPE

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metal dagger of beaker type (*i.e.*, with no defined mid-rib) is closely allied to the flint dagger of the same complex. The curiously obtuse point of many of the metal daggers resembles closely that of many of the flint examples.⁶ As a third case we may take the v-perforated button of the A+C complex; examples come from 5 separate burials in Derbyshire,⁷ whereas none have been recorded from the South Downs. Finally we may note that whereas 3 axe-hammers of the type commonly associated with beakers of the A+C group have been found in Derbyshire, none are known from the South Downs.

The cumulative evidence thus derived from the study of the distribution of the pottery and of its associated objects confirms in no doubtful manner the conclusion to which we had been driven from a direct study of the pottery and grave-goods themselves. There seems no reason to doubt that the beaker culture of this country is made up of two distinct complexes. Each of these complexes appears to have occupied different, though in places overlapping, areas. The B beakers appear to have reached us from the southeast; landings seem to have been effected on the coasts of Dorset, Sussex, east Kent, Essex, and south Suffolk, while the Thames appears to have afforded a good means of entry; smaller groups rounded the Norfolk coast and landed in the eastern corner of the Wash, while others seem to have reached the East Riding. The A+C group appears to have entered in very large numbers by way of the Wash as typical pots are found the whole way round the borders of the Fens; another point of arrival seems to have been by way of the Humber as the pots are plentiful in the East Riding. The Derbyshire group probably arrived by way of the Trent. Whether or not the Northumberland beakers arrived overland or by sea direct is uncertain, though the fact that most of the pots are of Abercromby's type C, a development from type A, argues for the former. The probability that the south Welsh beakers came from East Anglia is suggested as Dr Fox has shown⁸ by the distribution of handled beakers, which belong to the A+C group. More doubtful are the Wiltshire beakers, some of which belong from a typological point of view to the earliest of their class in the country. The view that they came overland via East Anglia is suggested by the general distribution, a wedge of B beakers shutting them off from the coast; on the other hand both the beakers from the Isle of Wight are typical

⁶ Compare figs. 90 and 96 of the British Museum Guide to the Bronze Age.

⁷ Net Low; Castern; Buxton; Gospel Hillock, Cowdale; Dowel Sterndale.

⁸ Dr Cyril Fox, *Arch. Cambr.* 1925, pp. 11-24.



FIG. 6. DISTRIBUTION OF STONE AXE-HAMMERS OF BEAKER TYPE

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examples of the A+C group. Crossings of the two complexes are to be found mostly near the peripheries of the beaker penetration, and mongrel beakers are thus found in Devon, the East Riding and Northumberland. In general, especially if we agree that the Wiltshire A+C beakers arrived via East Anglia, we can say that the A+C groups reached us by a more northerly route than the B beakers. Can it be a coincidence that whereas the former brought with them a Nordic inventory of flint daggers and holed axe-hammers, the latter used the west European tanged dagger and archer's bracer? But it is to the Valley of the Rhine and the Low Countries that we must look for the jumping-off place of our invaders, as we are reminded by the close similarity often to be noted between individual pots, *e.g.* a 'B' beaker from Felixstowe* (B.A.P. 94) and another from the 'hunebed' of Exloo, Drenthe¹⁰.

INDEX TO DISTRIBUTION MAPS

FLINT DAGGERS :—

Thames Valley and south of : London bridge, Chelsea bridge, Walton, Kingston, Hammersmith (2), Molesey, Cookham Dene, Hurlingham, Hornsey, London, Ham House, Henley, Barn Elms, Sion Reach, Hitcham; Carshalton, Maidstone, Peasmarsh, Glastonbury (4), Stogursey, Stonehenge, Durrington Walls, Hurst Hill, Lockeridge, Lambourn Down, and near Eastbourne (frag.)

East Anglia and area south of Trent : Newark, near Peterborough (2), Balsham, Burwell (3), Quy (2), Bottisham (3), Lode, Undley, Burnt Fen (2), Thetford (2), Lakenheath, Hare Park Cambridge, Cambridge Fen, Haslingfield, Brantham, Ipswich, Chelmsford, Kempston, Leighton Buzzard, Dunmow, Kelvedon (2), Braintree, Great Weldon, Fiskerton, Daventry, Scunthorpe, Kirkby-cum-Osgodby (2), Flixborough.

Wales : Llanellieu, Ystradvelte.

England north of Trent : Blake Low Matlock, Kenslow Mere, Arbor Low, Wetton, Neither Low Chelmorton, Green Low Alsop, Ragstone, Amble, Cottingham, Irthington, Garton Slack (2), Middleton-on-the-wolds, Acklam Wold, Smerril Moor, Wooler, Worsthorne Moor Bumby.

HOLED AXES OF BEAKER TYPE :—

Thames Valley and south : Datchet, Parliament Stairs, London, Avebury, Woodhenge, Amesbury, East Kennet, Bulford Down.

East Anglia and area south of Trent : Bardwell, Ely, Bottisham, Colchester.

Wales : Carno, Rhyader, Trelech a'r Bettws, Llanglydwen.

England north of Trent : Spratley, Sledmere, Rudstone, Holystone, Millfield, Northenden, Garton Slack, Sunderland, Sleights, Staintondale, Peak, Standlow, Carder Low, Parcelly Hay.

* Reproduced by permission of the British Museum.

¹⁰ Dr A. E. van Giffen, *The Hunebeds in the Netherlands*, pl. 154, fig. 81. Unknown to the author Dr Rudolf Stampfuss, remarked on the great similarity of the two pots on page 93 of his book 'Die Jungneolithischen Kulturen in Westdeutschland', 1929.

Beads from Nineveh

by HORACE C. BECK

ONE of the most important finds made during last (1929-30) season's excavation at Nineveh, is the collection of beads from what Dr Campbell Thompson, the Director, calls the bead-layer. This layer was about 6 feet thick and situated at a depth of from 27 to 33 feet below the surface on a portion of the site called A and B. In addition, some other beads were found at lesser depths on the part of the site called H, which I think I can show are very closely connected with those from the bead-layer.

How such a large number of beads came to be collected together here it is difficult to explain. As they were found in what appears to be the bed of a small rivulet they may have been washed down.¹ The lie of the land at this point makes it probable, but if so they must have been washed out from a large cache at a period when they were very much stronger than today. In their present condition a few minutes rolling in a stream would disintegrate most of the faience beads. Possibly they came from the remains of a bead factory, and the fact that a number of pieces of slag have been found tends to make this theory plausible.

The beads consist mostly of faience and shell, either complete shells or worked portions, but there is also a considerable number of stone ones, the most numerous of which are of gypsum.

There are several varieties of faience, most of which are in a very bad state of preservation. The core was usually black but in some cases it is a rather dirty white. In one case the core nearest to the glaze is white, whilst that nearest the perforation is black (1). The glaze, which is very opaque, was originally white, green, blue, red, and black. The white glaze was sometimes on a white core and sometimes on a black one. Mixed with these were some small, better preserved, pale blue faience beads (2) which are identical with some beads from H. 19 and H. 15.

¹The result of a further season's excavation makes it rather doubtful if there was an actual rivulet, but the fact that the bead-layer was at the bottom of a slope would render it extremely muddy in times of rain.

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The faience beads include all the simple forms such as oblate, spherical (3), barrel (4), bicone (5, 6), and cylindrical (7, 61), also triangular (8), square, and rectangular cylinders (1, 9).

There are, however, three completely new types of beads or pendants of great interest. First the imitation tooth pendants (10). These are made by inserting a large piece of quartz in a piece of faience somewhat resembling a fang, in which the perforation for suspension is made. The quartz portion was covered with soda and then the whole was heated to a great temperature so as to harden the faience and produce a sort of fire polish on the quartz. A very considerable number of these have been found, and a still larger number of the pieces of quartz from which the faience part has crumbled away. In some cases the resemblance to a human molar tooth is so striking that I think there is no doubt that these pendants were intended to represent teeth. This is of considerable interest, as the wearing of real teeth in Mesopotamia is very uncommon, and I know of no case in which human teeth have been worn there. Dr Campbell Thompson found a crocodile's tooth pendant last year and Mr C. L. Woolley has found two large carnivore canines (probably lion's) at Ur. In Egypt, crocodile, hyaena, and other teeth were occasionally worn, but usually after the XXIst dynasty. In Europe and Algeria, animals' teeth were frequently worn both in the Aurignacian period and until Roman times. It was, however, unusual to wear human teeth, and, although they have been found in one of the abri in France, there is no evidence of their having been worn extensively in Europe and Asia as they have been in many of the Oceanic Islands such as the Gilbert Islands, where a necklace consisting of 150 human incisors has been found.

It therefore seems difficult to explain the reason for these imitation teeth beads. The usual one, namely that the supply of real teeth is insufficient, scarcely seems to hold here, although it explains such cases as the demand for musk deer canines where porcelain copies are in demand.

Dr Campbell Thompson suggests that the explanation may rest in some form of magic. There certainly has existed at many periods in different countries a belief that magic can be worked against a person if the sorcerer has his teeth, hair, nail parings, or even his name, but it is not easy to see how these beads could be used. Another suggestion is that they hoped to derive some protection—possibly from people or perhaps from toothache—by wearing them. At the



BEADS (1) FROM NINEVEH, NOS. 1-33

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present day, in some countries, the wearing of a portion of an animal is frequently supposed to be a protection from attack by the animal, and also to give the wearer some of the strength of the animal itself.

The second variety of new faience beads are the bicolour inverted drop pendants (11). These pendants, which have the upper and lower parts of different colours, are not merely glazed with a different colour but the cores of the two parts are made of quite different materials and the two parts are very liable to become separated.

The upper part, which is perforated, is almost always black, whilst the lower part has a white or colourless core. This part was glazed in different colours, and, although in most cases the glaze has entirely disappeared, there are sufficient remains to show that whilst some were red others were yellow and blue. Beads of this shape but of uniform colour have been found at Ur, but they have not yet been accurately dated.

The third new variety of faience beads are the crumb beads (12, 13). These, with one exception, are either oblate or spherical, and the fact that they are this shape is one of the ways in which they differ from the Egyptian. The large size grains, now very loosely attached, are also much more of an integral part of the bead than the crumbs on the Egyptian beads, and consequently give them a different appearance. Most have a dark core, but a few have a light one, and there is still a trace of colour left on some which shows that they must originally have been red and blue. There is one barrel shaped specimen (13) which is the shape of the Egyptian, but in all other respects is like the oblate ones.

In addition to these three types there are many very interesting faience beads. A very rare type is the concave cylinder or windlass bead (14), a form previously found chiefly in China, though a single specimen in noble serpentine has been found in predynastic Egypt. There are many gadrooned beads, both the oblate melon form (15), and the barrel-shaped (16); most of them have 8 or more gadroons, but there are fragments that show that some barrel-shaped ones had only four gadroons like the beads from the Aegean. A string of beads identical to some of these with about 8 gadroons has been found by Mr Woolley at Ur, and has been dated by him to the earliest period of the royal graves.

Some of the beads are segmented: both cylinders (17, 56) and barrels (18), and in some cases they have a spiral round them (19), and occasionally the surface is granulated.

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One specimen in white faience (20) has a broad band of black making a zone round it, whilst another bead (21)², also of white faience, has a black chevron with two crests very boldly shown. (This bead was found in D. 10 but is evidently allied to some of the beads in the bead-layer). A few multi-tubular beads (22) in black faience were evidently used as spacers.

Amongst the amulets, the most frequent are little faience ducks. They generally have black cores and some still show traces of blue glaze. These are similar in shape to some found at Ur, but the latter are in white faience. These Ur ducks are not dated but are probably before 2200 B.C.

Several specimens of a new faience amulet were found (23) which possibly represent a beetle; also a very fine jug or vase amulet (24) which is perforated through the centre, in this way suggesting that it was strung on a terminal string like some of the large beads at Ur.

A faience button (25) has been found in this layer. It appears to be of an early type of faience, and to have been subjected to a great heat as there are so many bubbles in the glaze. This is a new type of button and much neater than the plaster of paris buttons found both last year and this.

A certain number of small blue to white hard faience beads were found (2). These are of interest as they are identical with a number found together at H. 19 in circumstances which date them with fair certainty to the prehistoric period. They show some similarity to faience beads discovered at Ur, of which one or two came from the royal graves. A section shows that the interior is very friable.

After the faience, the most numerous beads were of shell. Most of the shells were worn complete simply by cutting a hole so as to thread them. In addition to the complete shells were a number of amulets cut from shell.

The complete shells pierced to wear on necklaces are of many varieties. The olive, dentalium and pusiostoma shells are the most numerous. Cowry shells are rare, and when found are usually of large size (*cypraea lurida*, L.). The little money cowry (*cypraea*

²Another with 2 black zones (26) and in much better condition than usual was found at A 12, but evidently belongs to the bead-layer.

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moneta) is not found. Mr J. R. de B. Tomlin, of the Natural History Museum, South Kensington, has identified the following varieties.

From the Indo-Pacific or Indian Ocean :—

Oliva bulbosa, Bolton, very common; *Dentalium octangulatum*, Don, very common; *Strombus mauritanus*, L., common; *Conus musicus*, Brug., common; *Mitra literata*, Lam.; *Nerita polita*, L.; *Pusiosoma mendicaria*, L., very common; *Potamides cingulatus*, Gmelin.

From the Mediterranean Sea :—

Columbella rustica, L.; *Cypraea lurida*, L.; *Cypraea spurka*, L.; *Nassarius gibbosulus*, L.; *Conus mediterraneus*, Brug., common; *Cardita antiquata*, L.; *Glycymeris violacescens*, Lam.; *Osilinus tubiformis*, Salis.

From the local fresh water : *Melanopsis costata*, Ol.

The shells from the Indo-Pacific and Indian oceans probably came by way of the Persian Gulf, and these represent far the greater number of specimens.

Of the articles cut from shell, the most numerous are plain rings, of which over 50 were found. Similar rings were found in considerable numbers at Ur. The shell pendants were mostly sharply pointed and represented some form of tool or pick (27); they vary from 0.5 to 0.75 inches in length. There are also a few drop-pendants of various forms (28, 29, 30, 54). A curious variant is 31. One pendant seems to represent a tooth (32), but this may be accidental.

There is a fine shell amulet (33) possibly representing a beetle (?), and a large piece of shell pierced at one end which may represent a claw (34). There is also a portion of a large shell amulet representing the hind quarters of a running animal, possibly a horse. This specimen was not actually found in the bead-layer but in G 13 so it may not belong to the same period.

A certain number of small shells are blackened, I believe artificially and by means of iron. How this was done is not yet known, but the method has been carried on from an extremely early date, having been applied to a large number of ostrich shell beads found in Kenya by Mr L. S. B. Leakey, who believes that they date to the Aurignacian period. Scarcely any ostrich shell beads have been found here, and no blackened ones. An artificially blackened ostrich



BEADS ($\frac{1}{2}$) FROM NINEVEH, NOS. 34-63

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shell bead has been found in Palestine but not yet in Egypt, although some blackened sea shells have been found there amongst beads of the early dynasties. The rareness of ostrich shell beads at Nineveh is peculiar, as several pieces of ostrich shell have been found. There are, however, disc beads of sea shell and mother of pearl, and parts of two large mother of pearl rings (35) and a broken mother of pearl cogwheel bead (55) have been found.

Five very fine stone amulets were found; they are all of the flat variety. The largest, about two inches long, appears to have been originally a double bull amulet (36). At some time, one head being broken, it has been ground down to its present shape. A slightly smaller one, 1.4 inches across, is a perfect specimen of the double bull amulet (37). Another and smaller amulet (38) appears to represent a goat. The fact that the band round the base of the neck is repeated round the rump, and the conventional arrangement of the legs, make it probable that this was originally a double-headed amulet. Another amulet seems to represent a bear (39). From the position of the perforation it does not seem probable that it could have been double-headed. The other amulet brought back seems to be meant for a bear or else some animal such as a marmot (40). This certainly has not been double-headed at any time, and the method of treating the eye and head is decidedly superior to the others.

A large stone pendant (41), a typical drop form similar to some of the smaller shell ones, and a stone toggle (59) have been found.

There are five large limestone barrel-beads. Two are decorated with rough line designs typical of the early Jemdet Nasr period (42, 43, 44); one of these has the circle and flat cross-section that is frequently found in Mesopotamia but very rare elsewhere. Another of them which is not engraved is a tabular barrel (45).

The stone beads are not at all numerous and most of them are of pink or white gypsum and are quite small. They have a peculiar appearance, as they are quite irregular, and at first sight look as though they had been cast (58).

The material is sulphate of lime and is the true alabaster. Almost all the material which is called alabaster in Egypt is carbonate of lime or calcite.

What was believed to be a moulded button was found last year and another this year, and the question as to whether these beads were cut out or moulded becomes of some interest. At Ur Mr Woolley has this year found a number of alabaster vases which are

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completely out of shape and have concretions on the sides and are very similar in appearance to the gypsum beads. A microscopic examination of a section through a bead shows an extremely pure material, much purer than that found in the sections of the buttons. There appear to be parts where, due to pressure and moisture, the bead has broken and cemented itself together again. Also there are no traces of bubbles like those found in the button last year. With the exception of the parts which appear to have cemented again, the bead section is so homogeneous that I think it is fairly certain that it was cut from the solid and not moulded. On the other hand the section of the button shows some relatively large pieces of what look like natural gypsum surrounded by a much finer crystalline structure.

In addition to one larger gypsum bead (63) a small pendant (46) has been found.

A few lapis beads were all small; the most interesting was a minute tabular bicone with corner perforation (47). On one of the main surfaces is a very well executed design of a spot with two concentric circles. Some were small bicones like those Mr Woolley has found in such quantities in the royal graves at Ur.

Amongst the other stone beads may be mentioned a fine moderate sized barrel bead of sard with double cone perforation, evidently early; a black hard stone triangular barrel, very roughly made and possibly cut from a natural pebble; a long squared cylinder (48) in black steatite 2.3 inches long; a cylinder of the same material 1.3 inches long, and a black annular bead of the same material (62) similar to those found in the Aegean.

Two very unusual beads were made of bitumen mounted on thin copper or bronze tubes (49). These were long barrel beads and very fragile. A cylinder bead (50) is also made of a similar material, but it does not seem to have a central tube.

One or two very corroded metal beads were found in this layer. The largest was a bicone and is apparently made of silver or lead; owing to the low specific gravity it is probably the former (51). It may have a core of bitumen like many of the gold and silver beads from Mesopotamia, but it is difficult to say without breaking it open.

In the same layer where these beads were found, a certain number of articles of a later date were also discovered. These included a bit of a green glass vessel of a type common in Roman times, a portion of a glass bracelet which may be Greek, and a very fine glass eyebead (52)

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which may have been made any time between 1000 and 500 B.C. Glass unfortunately corrodes so badly in the soil that only the slightest traces are sometimes found ; but enough fragments have been found to show that several other types of glass beads were there although it is not possible to date them with any accuracy.

It is interesting to note that no blue frit beads or *cypraea moneta* (the money cowry) were found in this layer.

In considering the dating of the main collection of beads from the bead-layer the following facts indicate an early date:—

(1) A string of faience gadrooned beads, identical with those in the bead-layer, has been found by Mr Woolley in the earliest period of the royal graves at Ur.

(2) A black faience cylinder bead, a black faience multitubular bead, and a pale coloured cylinder bead identical with those from the bead-layer, have been found by Mr Woolley in the Jamdat Nasr period at Ur.

(3) The small green blue to white faience beads found by Dr Campbell Thompson at H. 19 in a pot which he definitely dates to the prehistoric period, coeval with the upturned bowls, are identical with a number of beads from the bead-layer. These are also made of a material which is very similar to that used to make the rare blue faience beads found in the royal tombs at Ur.

(4) The gypsum beads from the bead-layer which have warped are similar in appearance to the warped vases found by Mr Woolley in the Jamdat Nasr period remains at Ur.

(5) Several limestone beads and probably some other stone beads belong to the Jamdat Nasr period.

(6) The decorated shell bead (53) is identical in technique and general design with a bead found at Tel el Obeid. (See Hall and Woolley, *Tel el Obeid*, plate XII. 10).

(7) Some beads found at H. 22 (a presumed early site) are identical with the faience beads in the bead-layer. These have amongst them half of a bicolour inverted drop pendant.

Although some of these points in themselves may be of little importance, several are very striking, and taken altogether they convince me that the beads are very early, at any rate as early as the royal graves at Ur, and possibly earlier. There are wide differences

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of opinion amongst archaeologists as to the date of these early sites, but I think it is safe to say that the beads are not more recent than 2900 B.C.

An examination of the plan and elevation of the ground where Dr Campbell Thompson has been excavating makes it possible to propound a very plausible theory as to how these beads arrived in the bead-layer. This layer lies at the bottom of a hill. Near the summit of this hill, on site H, are a number of apparently undisturbed remains of prehistoric date. Some of them are as near the surface as H. 12, whilst at H. 15, and H. 19 are blue faience beads identical with those in the bead-layer. In the 7th century B.C. this hill was cut into and a wall erected along it. The theory is, that originally these beads were amongst prehistoric remains near the top of this hill, and that at some time, either during or before the building of this wall, the earth containing the beads was disturbed and they were washed or rolled down the slope into the rivulet or marsh at the bottom.

Saxon and Norman Sculpture in Durham

by G. BALDWIN BROWN

Professor Emeritus of Fine Art, Edinburgh University

WHEN one phase of decorative art for reasons historical, social, or religious, passes out of existence and is succeeded by another, there generally occurs what is technically termed an 'overlap'. This is so common that it is often accepted without consideration as universal, and the expression 'Saxo-Norman overlap' is employed with reference to architecture of early twelfth century where it has validity, but also to decorative sculpture where it possesses no solid ground or meaning. Saxon stone carving is on different lines from Norman and the two do not coalesce, the Norman enriched tympanum carrying the Norman art, the free-standing carved cross the Saxon art. The above must be left for the moment as a statement which will later on receive its due explanation and support, but the subject of the present brief paper is germane to it.

It so happens that we possess datable specimens of late Saxon and early Norman sculpture in the shape of carved heads belonging to Saxon crosses that stood on the future site of the Norman Chapter House of Durham Cathedral and may be dated early in the eleventh century, and Norman enriched capitals of columns in the early Castle Chapel that can be placed in date before the year 1100. This early Norman chapel, which is of course quite apart from the Cathedral, is involved in the extensive works of preservation going on in the Palace-Castle, and the Clerk of Works in charge is Mr C. Singe, who unites with a genuine scholarly interest in old work expert skill with the camera. At the suggestion of the writer he has taken a series of views of the capitals of the Chapel columns, among the first examples of Norman decorative sculpture in England. These photographs are reproduced here, not on account of any beauty to which they may lay claim, but as interesting historical documents. They are accompanied by a few explanatory notes. As a piece of Saxon work

SAXON AND NORMAN SCULPTURE

for comparison there has been added a view of the best preserved example of the Chapter House cross-heads, which are more or less contemporary in date but in quite a different style of work. With the Normans the architectonic sense and the spirit of system are supreme, while the Saxon fancy, as evidenced on the early Sceatta coins, is far more inventive and lively.

There are in the Chapel six columns supporting the vaulted roof, in two rows of three in each, a north and a south row. The southwest column is numbered 1, the middle one in the south row is 2, and the southeast column on the altar steps is 3. In the other row number 4 is the northwest column and numbers 5 and 6 follow towards the east. Each of the six capitals would provide four views, but the five specimens out of the possible twenty-four are quite sufficient to give an idea of the design and execution of the work which is carried out in stone. The photographs are arranged in numerical order according to the scheme just given.

Plate 1, NW corner of number 2. Two quadrupeds, one on the west the other on the north face of the cap, have their heads joined together at the corner and take the place of a volute. Most of the surface of the cap is covered with irregular 'chip-carving' in stone, showing the beginning of what became systematized into the 'star' patterns, etc., of the twelfth century.

Plate 2, SE corner of no. 3. At each corner there is a grotesque human figure with the large head boldly and skilfully modelled, and it is characteristically Norman to note that the head is so treated as to correspond in general form to the carved volutes of the capitals as a whole. This is Norman 'system' in operation. On all the caps the middle spaces between the volutes or other corner ornaments are occupied with some ornamental motives, most generally by very stiff and formal conventional foliage. Under these sprays we find often, as here on no. 3, a human mask.

Plate 3, SW corner of no. 6. This cap is more severely architectural than most of the others. There is at each corner a volute, and this, with the other similar corner volutes, gives us the characteristic difference between Norman and Saxon work. No Saxon carver could have given his architectural member so clear and firmly modelled a shape, just as no Norman could give such liveliness and grace to

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bits of foliage or to animals as came naturally to the Saxon. Here on no. 6 the middle space on the south has, above, a conventional spray, and, below, a flat and ugly human mask. A similar head on the western face is far better. It has an open mouth with tongue showing and a beard. There are two small horns on the forehead and ears pricked up above.

Plate 4, NE corner of no. 5. Here are better and less Saxon volutes than we find anywhere else. The tameness and want of grace in the foliage sprays on the middle spaces will be apparent.

Plate 5, NW corner of no. 4. The western face of this cap is occupied with an ambitiously designed quadruped who stands facing south. The body is treated with incised diagonals, evidently suggested by the stones set lozenge-fashion on so many pieces of Norman walling. The head is furnished with stag's horns, and under its snout there appears to be crouching a human figure facing south with a huddled up creature south of it.

Plate 6, Saxon cross-head from the foundations of the Chapter House.

This is one of four cross-heads of the latest Saxon period, pretty surely within half-a-century of the early Norman caps, and shows, not ruder, but more fanciful and irregular, work. In the central round the Agnus Dei, with right forefoot on a sacred book, and very fair proportions, possesses life and animation. This central figure is surrounded by the Evangelists—Luke and Mark on the side—arms in the form of human bodies with the symbolic animals' heads, and with lions' feet under Mark (sinister side). Matthew is represented by the Angel above, while for St. John we must look to the back of the topmost arm (not shown here) where is a fairly successful eagle. What the carver meant by all his quaint details it is not possible to say, but the contrast that the work presents to that of the Norman designer is most significant of the difference between the two arts.

PLATE I



SCULPTURE IN THE CASTLE CHAPEL, DURHAM

Northwest corner of cap of column 2

Pls. (pls. i-v) Mr C. Singe

facing p. 440

PLATE II



SCULPTURE IN THE CASTLE CHAPEL, DURHAM
Southeast corner of cap of column 1

PLATE III



SCULPTURE IN THE CASTLE CHAPEL, DURHAM
Southwest corner of cap of column 6

PLATE IV



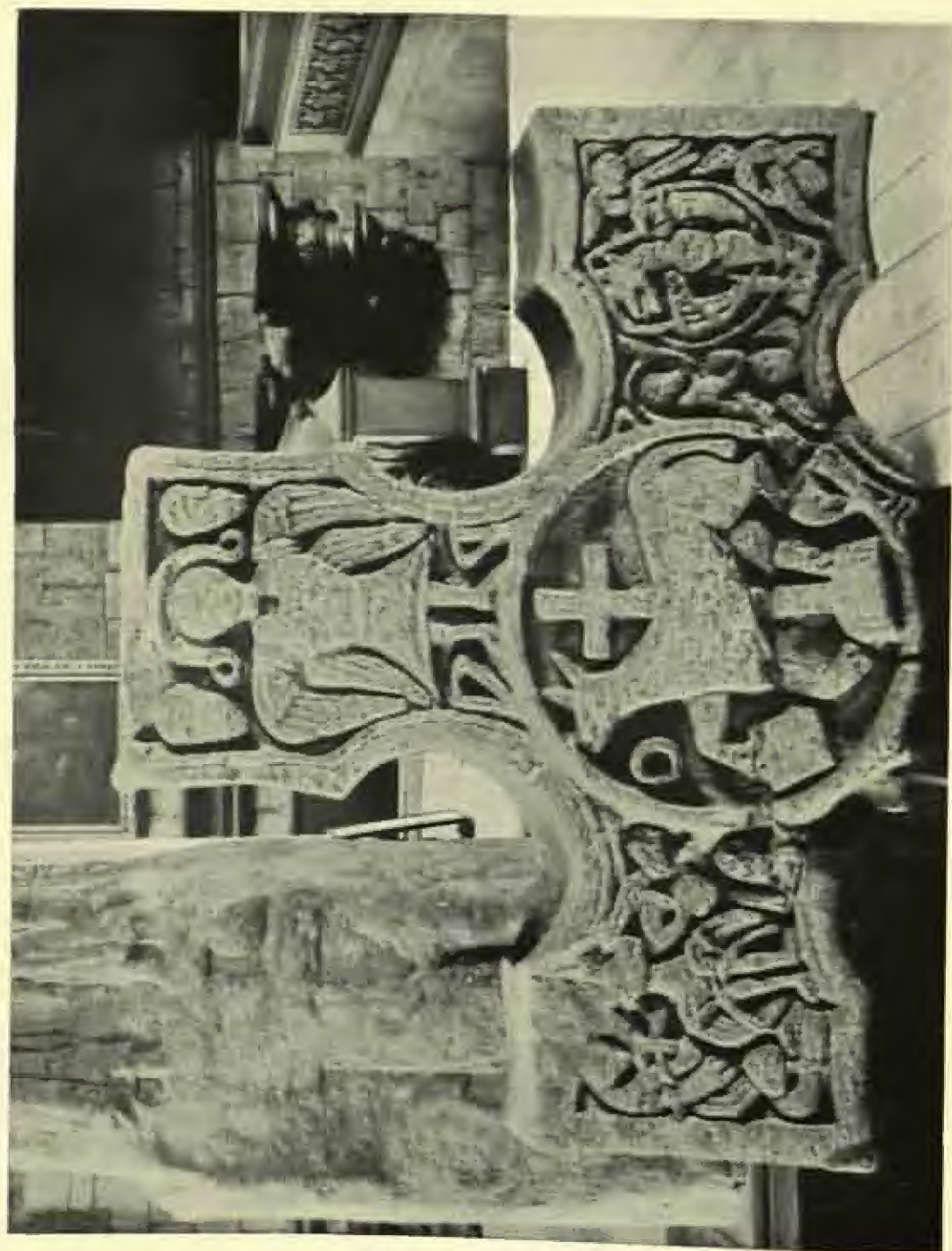
SCULPTURE IN THE CASTLE CHAPEL, DURHAM
Northwest corner of cap of column 3

PLATE V



SCULPTURE IN THE CASTLE CHAPEL, DURHAM
Northeast corner of top of column 4

PLATE VI



LATE SAXON CROSS-HEAD, DURHAM CATHEDRAL
Pl. 6. Hadden Brown

Cerdic and the Cloven Way

by O. G. S. CRAWFORD

ENGLAND is an Anglo-Saxon country. Most of its present inhabitants are at least in part descended from Teutons who came over here from Scandinavia and Germany. The history of these invasions must therefore be of interest to all English-speaking people; and fresh evidence deserves early publication.

In the following essay I shall discuss only the arrival of Cerdic and Cynric and their followers—on what portion of the coast did they land, and by what route did they reach the Upper Thames, where later they established the nucleus of a kingdom? This is one of the most controversial problems of early English history; it is still unsolved and students have to decide between three possible routes. According to the only surviving historical account they landed somewhere on the south coast under the leadership of Cerdic and Cynric, and fought their way northwards through Wiltshire. According to Mr Leeds, who rejects the Chronicle account and bases his argument upon archaeological evidence, they landed on the shores of the Wash and advanced southwestwards along the Icknield Way.¹ According to others they sailed up the estuary of the Thames, and settled on its banks.

I do not propose to discuss the respective merits of these routes. It will be easier to do so after the completion of the map of Anglo-Saxon Britain (450–850) which is now being compiled at the Ordnance Survey. I shall assume that the facts related by the Chronicle did actually occur. I shall hold a brief for the Chronicle, and attempt to reconcile it with the facts of topography. No harm is done by such special pleading if the advocate is prepared (as in this case he is) to accept whatever verdict the jury may find.

The facts are well-known and will be found in the text-books²; but a summary statement may be useful for reference:—

495 Cerdic and his son Cynric landed at Cerdices ora and fought with the Britons on the same day.

¹ 'The West Saxon invasion and the Icknield Way', *History*, July 1925, x, 97–109.

² Such for example as Professor A. M. Chadwick's *Origin of the English Nation* (Cambridge, 1907) where all these matters are fully discussed.

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- 508 Cerdic and Cynric killed Natan leod, a British king, and the district was called Natan leah afterwards as far as Cerdices ford.
- 514 The West Saxons landed at Cerdices ora. Stuf and Wihtgar defeated the Britons.
- 519 Cerdic and Cynric began to reign, and in the same year fought against the Britons at Cerdices ford.
- 527 Cerdic and Cynric fought against the Britons at Cerdices leah.
- 530 Cerdic and Cynric captured the Isle of Wight, and killed some men at Wihtgares burh.
- 534 Cerdic died. The Isle of Wight had been given to Stuf and Wihtgar by their relations (nefan) Cerdic and Cynric.
- 544 Wihtgar died and was buried at Wihtgara burh.
- 552 Cynric defeated the Britons at Searo burh.
- 556 Cynric and his son Ceawlin fought against the Britons at Beran burh.
- 560 Ceawlin succeeded to the throne of Wessex.

It is plain that these events began somewhere on the coast of Hampshire. Though few of the places mentioned can be identified with certainty, there are enough to indicate the locality. Cerdices ford is said by Ethelwerd³ to be on the Avon and can safely be identified with Charford, between Salisbury and Fordingbridge. (The exact topography of the fords there is dealt with below). Searo burh is Old Sarum; Beran burh is Barbury Castle on the Marlborough Downs; Wihtgara burh is Carisbrooke Castle⁴; and Wiht is of course the Isle of Wight.

The key of the opening campaign is Cerdices ora, and unfortunately the site of this is unknown. It must be somewhere between Christchurch and Portsmouth, and it is very unlikely to have been in the immediate neighbourhood of either of these two places. If Cerdic and Cynric landed at or near Christchurch and advanced up the Avon Valley—and that is the only possible direction to take—they would have had to cross the Avon at Fordingbridge; for north of this place the steep eastern sides of the valley abut right on the river and prevent passage along that side. Further advance would have to have been,

³ *Monumenta Historica Britannica* (Record Commission, 1848), 503.

⁴ See note 1, at end, p. 457.

CERDIC AND THE CLOVEN WAY

then as now, along the western side. The battle would then have been at Fordingbridge rather than at Charford.

On the other hand, it is most improbable that they would have landed anywhere east of the Test, for in that event they would surely have spread northwards into Hampshire rather than northwestwards into Wiltshire. Calshot is topographically possible, but the *name* has no connexion with *Cerdices ora*.⁵ Indications point to a site somewhere on the western shore of Southampton Water, near its head; and for reasons which will be evident later I should place *Cerdices ora* at Totton. This is the natural haven of ships coming from the east, if they enter Southampton Water; there are no harbours between it and Calshot, and indeed Calshot is hardly a harbour at all. Totton is still used by quite big ships, and within living memory it was quite a busy port. It is at the head of Southampton Water, and they would naturally penetrate as far inland by water as they could. Another argument in its favour is the statement that the district between *Cerdices ora* and *Cerdices ford* was called *Natan leah*. For immediately to the west of Totton is a low-lying district called Netley Marsh, and the early forms are consistent with a derivation from *Natan leah*.⁶ The old name of the mysterious earthwork at Downton was Nettlebury; but we must, in the absence of any early forms, resist the temptation to connect it etymologically with *Nata*; for a form *Natan byrig* would have become *Natebury* or *Netebury*, and the more obvious explanation of Nettlebury is better.

Cerdices leah is to be looked for west of the Avon, for the battle there occurred after that at *Cerdices ford*.

If, then, the Chronicle is to be trusted, and if these identifications

⁵ Early forms are:—*Celces ora* (980): *Calcheshourd* (1340?): *Calsherdes* (1539): '*Caldshore*, communely *Cawshot*' (Leland): *Calshord* (State Papers, Eliz.). The suffix survives in *Ower Lake*, applied to the creek behind the shingle-spit. The name seems to mean '*chalk shore*'; referring perhaps to the place where chalk was disembarked for manuring the barren sandy and gravelly soil. Water-transport would be used for such heavy goods; there are sources near the sea at Portsdown (Paulsgrove) and Pan Down, Shide, Isle of Wight. Chalk is still used for marling at Nursling.

⁶ Early forms of Netley Marsh are *Nateleg'* (1248), *Natele* (1256), *Natale* (1316), *Natele* (1327). Netley Marsh lies south of Titchbury Mount and west of Bearslane End (see map, p. 456). Professor Mawer, to whom I am indebted for these forms, thinks that the name Netley (Marsh) 'may well go back to *or* *Natan leah*'. The present spelling may be due to the influence of Netley Abbey near, whose early forms (*Letelie*, *Latalie*) rule out identification with *Natan leah*. For Nettlebury see Heywood Sumner, *Earthworks of the New Forest*, p. 96.

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of places are correct, even if only approximately, we must conclude that the invaders led by Cerdic and Cynric landed on the coast of Hampshire and gradually spread northwards into what became later the kingdom of Wessex. And now a word must be said about the Jutes.

The Jutes were a Teutonic tribe that migrated from Jutland and settled in Southern Hampshire and the Isle of Wight. Another branch of the same tribe occupied Kent. Bede is our authority for these facts, which he states explicitly ; but his statements are confirmed by archaeological evidence. The cemeteries of the pagan period at Brockbridge near Droxford in the Meon Valley and at three places in the Isle of Wight have all yielded grave-goods which, in the opinion of experts, have affinities with the Kentish rather than any other culture-area. Jutish elements have even been suspected at Harnham Hill near Salisbury where an important cemetery was excavated in 1852.⁷ It is certain, however, that the Jutes occupied the whole of Southern Hampshire. That it included Bishop's Stoke (Eastleigh) is proved by the old name of this place Aet Yting Stoce (A.D. 960), as already pointed out by Dr Grundy.⁸ The place Ad Lapidem⁹ was in it ; and this, whether to be identified with Stoneham or elsewhere, cannot in any case have been far from Redbridge. The old name of the New Forest, Ytene, contains the same word.¹⁰

Now according to Asser, Stuf and Wihtgar were Jutes. Speaking of Oslac, Alfred's maternal grandfather, Asser says : ' Qui Oslac Gothus erat natione ; ortus enim erat de Gothis et Jutis,¹¹ de semine scilicet Stuf et Wihtgar.'¹² This is quite a definite statement that Stuf and Wihtgar were Jutes ; and if they were, then their ' relations ' Cerdic and Cynric must surely have been Jutes also.

What then has become of the ' West Saxons ' led by Cerdic and Cynric, and of that other mysterious body of ' West Saxons ' which landed at Cerdices ora in 514 ? Is it not obvious that a landing of *West Saxons* is an impossibility ? The West Saxons were so called because their chief territory, on the Upper Thames and Thame, lay to the west of that held by the East Saxons. It was a territorial distinction, and could not possibly have been applied to them before they

⁷ *Archaeologia*, XXXV, 259, 475.

⁸ *Arch. Journ.*, LXXVIII, 112.

⁹ Bede, ch. IV, §16.

¹⁰ Florence of Worcester, ed. Thorpe, II, 44, 45. Stevenson, *Asser*, 168.

¹¹ The confusion of Goths and Jutes is, according to Stevenson, purely a verbal one.

¹² *Ed.* by Stevenson, p. 4.

PLATE I

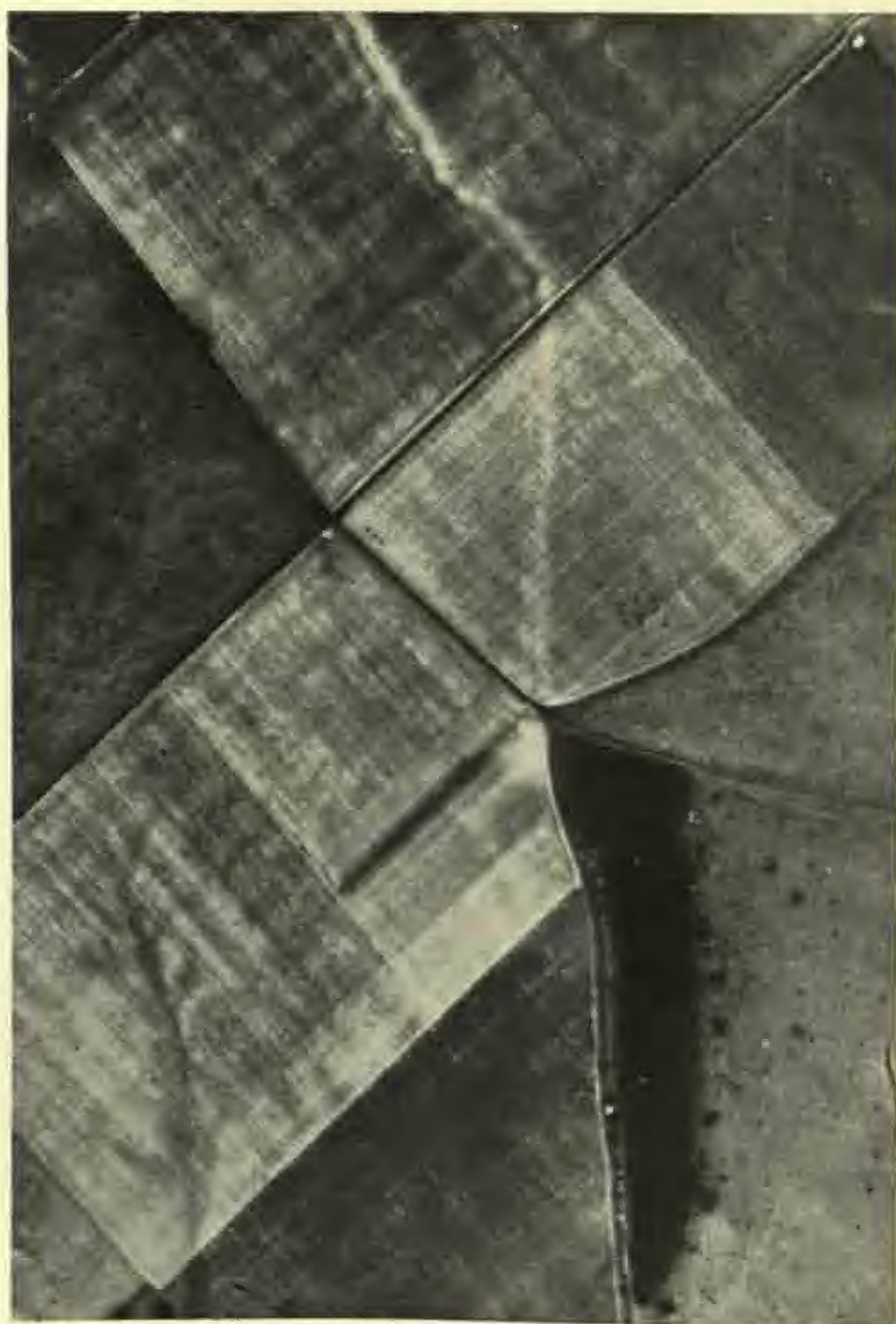


GRIM'S DITCH ON PYRDINGES LEA, SHOWING ALSO CELTIC FIELDS IN WHAT IS NOW
ARABLE LAND (COMPARE PLATE VI). WILTS 71 50

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facing p. 444

PLATE II



GRIM'S DITCH ON GALLOW'S HILL AND BREAMORE DOWN
(The copse is Jubilee Copse, Hants. S4 NE)
Crown copyright reserved

CERDIC AND THE CLOVEN WAY

settled in this particular region. Consequently, when the Chronicle states that Cerdic and Cynric became rulers of the 'West Saxons' in 519 before their subjects had even crossed the Avon, it is using language which is quite irreconcilable with the facts.

It may, however, be urged that the term 'West Saxon' was used proleptically by the 9th century compiler of the Chronicle; that the emphasis is on 'Saxon' rather than on the 'West', which became attached to them in later times; and that when Cerdic is described (sub anno 534) as the 'first king of the West Saxons', all that is meant is that he was ancestor of the kings of the later West Saxon dynasty, that is, of the kings of Wessex. There still, however, remains the difficulty that the founders of the West Saxon dynasty should have come from the province of the Jutes. May we not overcome it by invoking the blessed word *Gewissae*? Bede states categorically that the *Gewissae* and West Saxons were the same,¹³ that the one was merely an alternative name for the other. *Gewissae* means allies, and seems to imply a confederacy of tribes. May not a Jutish army have advanced, as the Chronicle describes, through Wiltshire, and have later imposed itself upon the inhabitants of the Upper Thames and Thame who—ex hypothesi archaeologico—were already Saxons¹⁴? Such a state of affairs is not necessarily inconsistent with the presence (between 556 and 571) of an as yet unsubdued British king as near as Cirencester.

Let us suppose, then, that Cerdic and Cynric were Jutes who led a Jutish army from south Hampshire northwards through Wessex, and whose successors established a kingdom there. The bulk of the inhabitants may already have been Saxons who had reached the Upper Thames region by other routes, or they may have been Britons. If, as Mr Leeds maintains, they were Saxons who had come along the Icknield Way from the Fen shores, certain resemblances between the social structure of Saxons and Anglians become more easily explicable.¹⁵ We are not obliged to produce archaeological evidence of Jutes in this region, since they may never have entered it in large numbers.

¹³ Bk. III, ch. 7.

¹⁴ If the archaeological evidence is valid it follows that either the Chronicle dates must be wrong, or else its facts—and it was Saxons, not Britons, who were conquered in 571. I am not prepared to admit the validity of the archaeological evidence; I merely assume, for purposes of argument, that it *may* be correct.

¹⁵ Chadwick, *Origin of the English Nation*, chapter IV.

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THE CLOVEN WAY¹⁶

We have seen that Cerdic landed at Cerdices ora, which I suggested was at Totton, and that later he crossed the Avon at Charford. I think it is possible to identify the exact route he followed.

Dr Grundy¹⁷ has established the fact that Saxon armies invariably followed important highways, generally ridgeways; and that in consequence the sites of battle-fields are to be looked for along such roads. It was indeed for this reason that they were called 'here-paths' (*here*=an army). Only along such roads could a large body of men have moved in those days without becoming 'entangled in the land'. It is unnecessary to enlarge upon this fact, which must be obvious to students of history and topography. Now it so happens that an old road (for the most part disused and forgotten) can be traced without a break from Totton, along the northern skirts of the New Forest to Charford, and thence across the Avon to Old Sarum. It is not, like some such, a mere figment of the map-reader's imagination; it can actually be seen today, in the form of deeply-cut trenches or traffic-ruts, produced by the combined action of use and weather. It was this feature which gave it its name, for at a certain point in its course (between Lyburn and Golden Cross, near Windyates) it has cut right through a narrow sandy spur called, from this, Cloven Hill.¹⁸ But everywhere along its course these traffic-ruts occur, as may be seen from the air-photographs here published. (Plates III-VI).

When I discovered this old road in 1912, I had no thought of connecting it in any way with Cerdic, but imagined that it was an old track from Southampton to Fordingbridge. I was led to examine it by noticing a trench marked by hachures on the Ordnance Map (Hants 64 NE), running southeastwards from Tachbury, a hill-fort. I thought it might have some connexion with a Roman road I was interested in. The aforesaid trench proved to be an old lane, long disused, which ran southeastwards into what is now called Calmoor Road; at Bearslane End it comes into the main Fordingbridge road and, under the name of Bear's Lane, enters Totton. (Fig. 6). Northwestwards I followed it over the shoulder of Tachbury hill, across Barrow hill to

¹⁶ In Dr Williams-Freeman's *Field Archaeology of Hampshire* (Macmillan, 1915) there is published an extract from a letter of mine to the author, written immediately after its discovery: pp. 435-6.

¹⁷ 'The Saxon battlefields of Wiltshire', *Arch. Journ.* LXXV, 175-194.

¹⁸ See note 2 at end, p. 457.

CERDIC AND THE CLOVEN WAY

the Cadnam river and Stagbury, where are four barrows on a steep-sided natural knoll. Furzeley common (the Stagmoore of 1620) has many systems of traffic-ruts and their general course may be observed from the top of Stagbury. Those we are following converge into a single, fairly deep cleft on the southern spur of the hill, but immediately spread out again and pass into a wood. I followed them thence to Dazel Corner. Here they cross the county boundary into Wiltshire, running parallel with the boundary a few yards to the north of it. They cross the Landford road¹⁹ near Lord's Oak just south of the cross-roads, and are plainly visible across Woodside bottom, north of No Man's Land. (Plate III). Here they separate into two distinct groups, which unite again in a copse (plate IV) at the southern end of Risbury hill. They cross the road near the saw-mill south of Lyburn Farm, and can be followed continuously through the beautiful pine-woods of Cloven Hill Plantation. Over Cloven Hill itself they converge into the before-mentioned deep cleft from which this part of the road obtained the name I have here applied to the whole of it. The positive aspect of the cleft is seen in a broad causeway where the washed-out debris has been spread in the course of ages as a small delta.

At this point I lost it in 1912, being under the influence of an erroneous hypothesis. Recently when I became interested in the site of Charford, it occurred to me that there should, by all the rules, be an important ancient highway leading down to the ford from the east, and I determined to look for it, beginning at the Avon. It was then that I first connected Charford with the Cloven Way.²⁰ I found a deep traffic-rut leading up from the disused ford along Charbridge lane. (Fig. 5). Passing up from Hale Dairy Farm along the bottom of a short valley it consists of a single deep cleft (a 'smugglers' way') of sufficient depth to be indicated by hachures on the Ordnance Map (Hants, 55 NW). This cleft gets less pronounced as it comes up on to the plateau, and at the Home Farm it falls into the modern road to Hatchet Green. It goes by Windmill Ball, an eviscerated mound, possibly prehistoric, and

¹⁹ This road is an old one, with a magnificent array of traffic-ruts accompanying it on the east, immediately north of its crossing of the Cloven Way. They can be seen in the open fields and heath north of the houses. Landford was suggested by W. H. Stevenson (*Asser's Life of Alfred*, 1904, 319) as being probably the Leonaford where Asser stayed for 8 months with Alfred in his *villa regia*.

²⁰ Since writing this I find that this western portion of the road has been briefly described by Mr Heywood Sumner, who also connects it with Cerdices' ford. See Dr Williams-Freeman's *Field Archaeology of Hampshire*, 1915, 445.

PLATE III



OLD HOLLOW WAYS NEAR LORD'S OAK
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PLATE IV



THE CLOVEN WAY OVER RISBURY HILL.
(From copyright reserved)

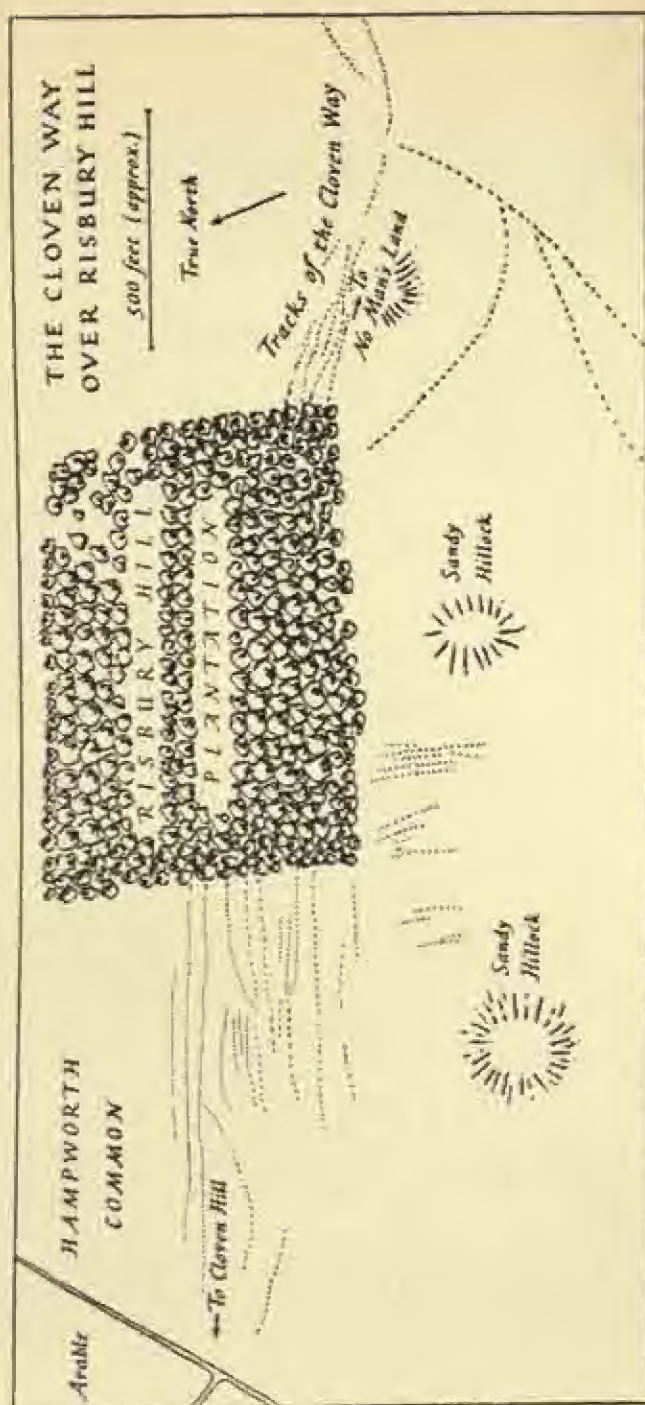


FIG. 2

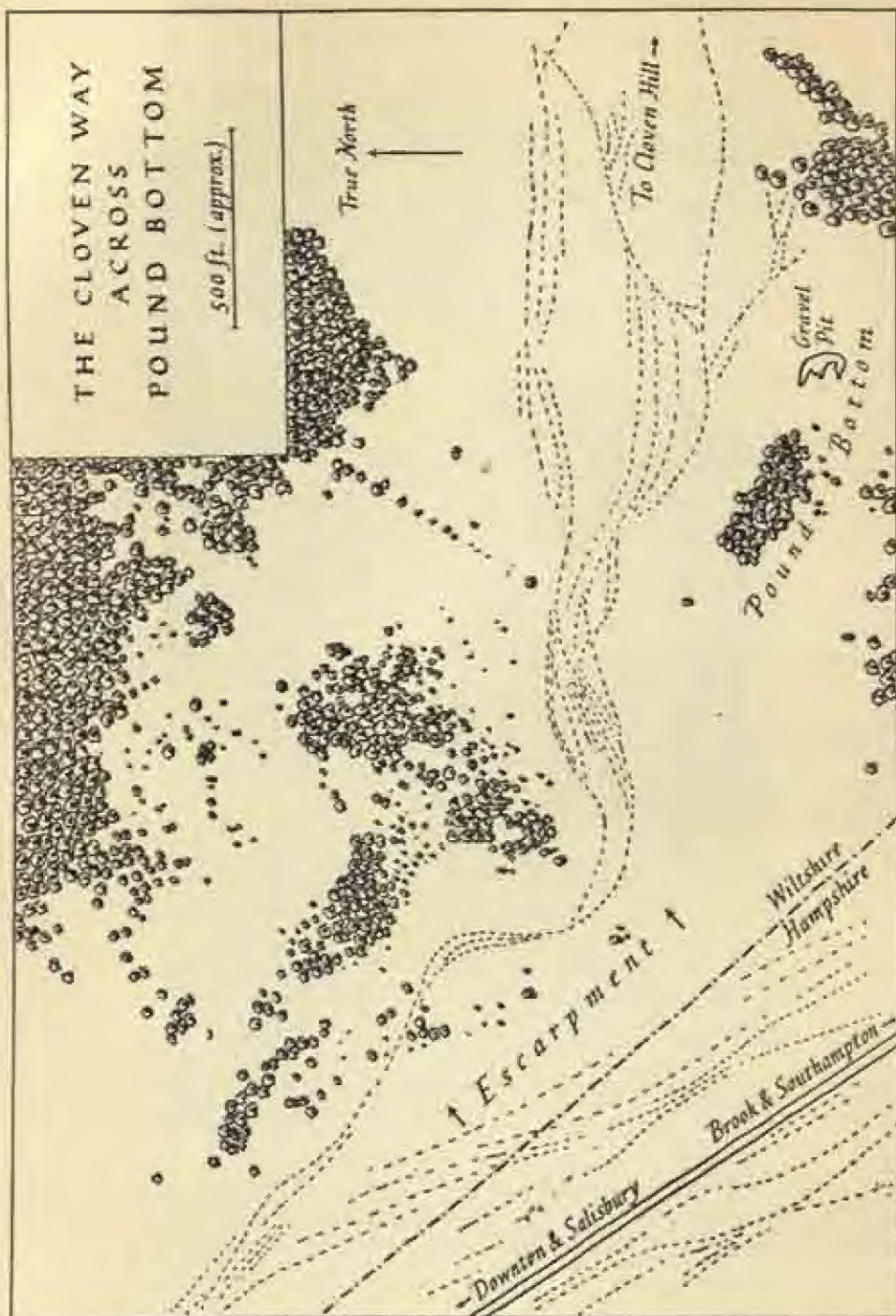


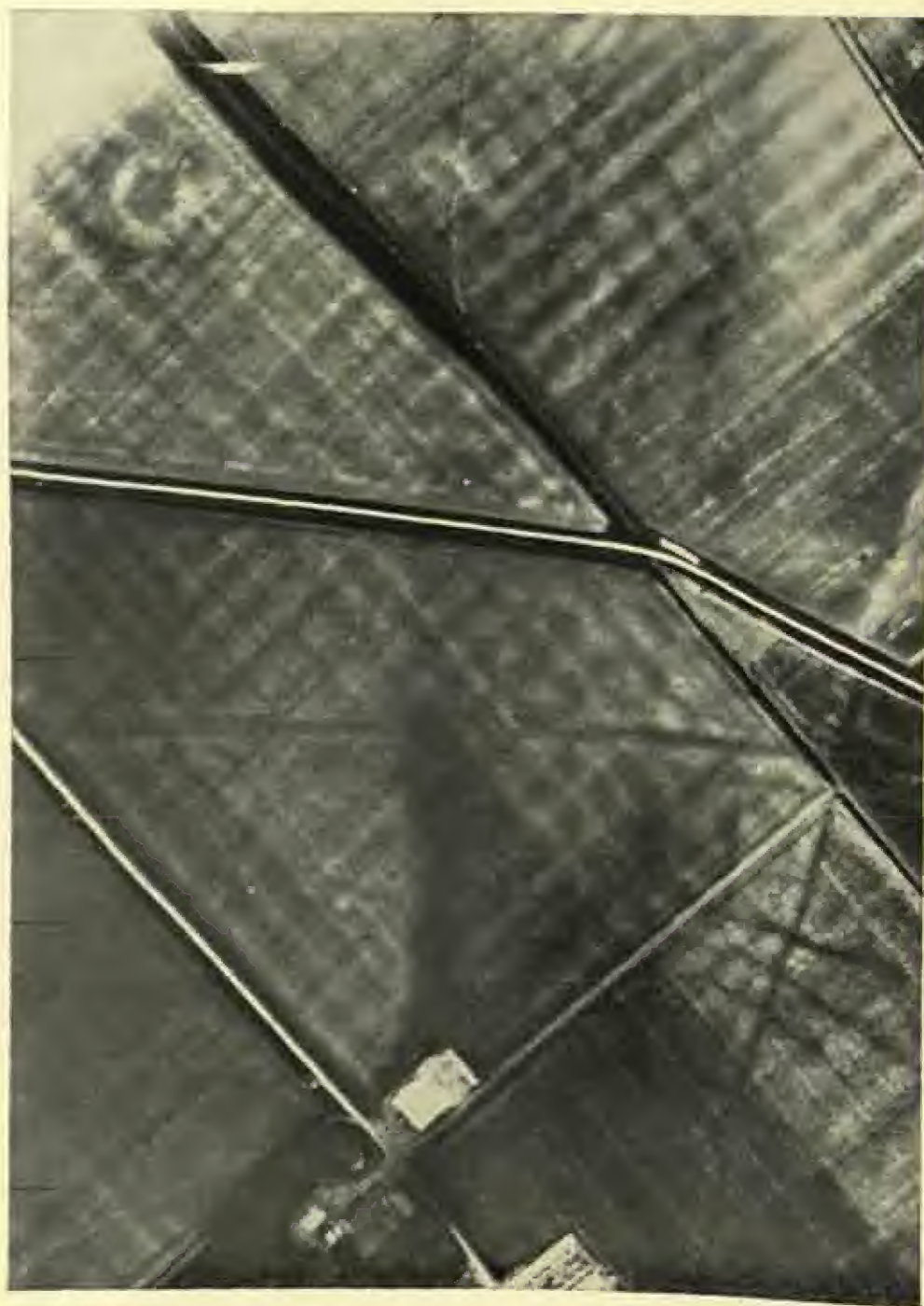
FIG. 3

PLATE V



THE CLOVEN WAY WHERE IT CLIMBS THE ESCARPMENT
Crane copyright secured

PLATE VI



GRIM'S DITCH AND OLD TRAFFIC-RUTS ON THE UPLANDS OF FYRDINGES LEA
(use all available land)
Common copyright reserved

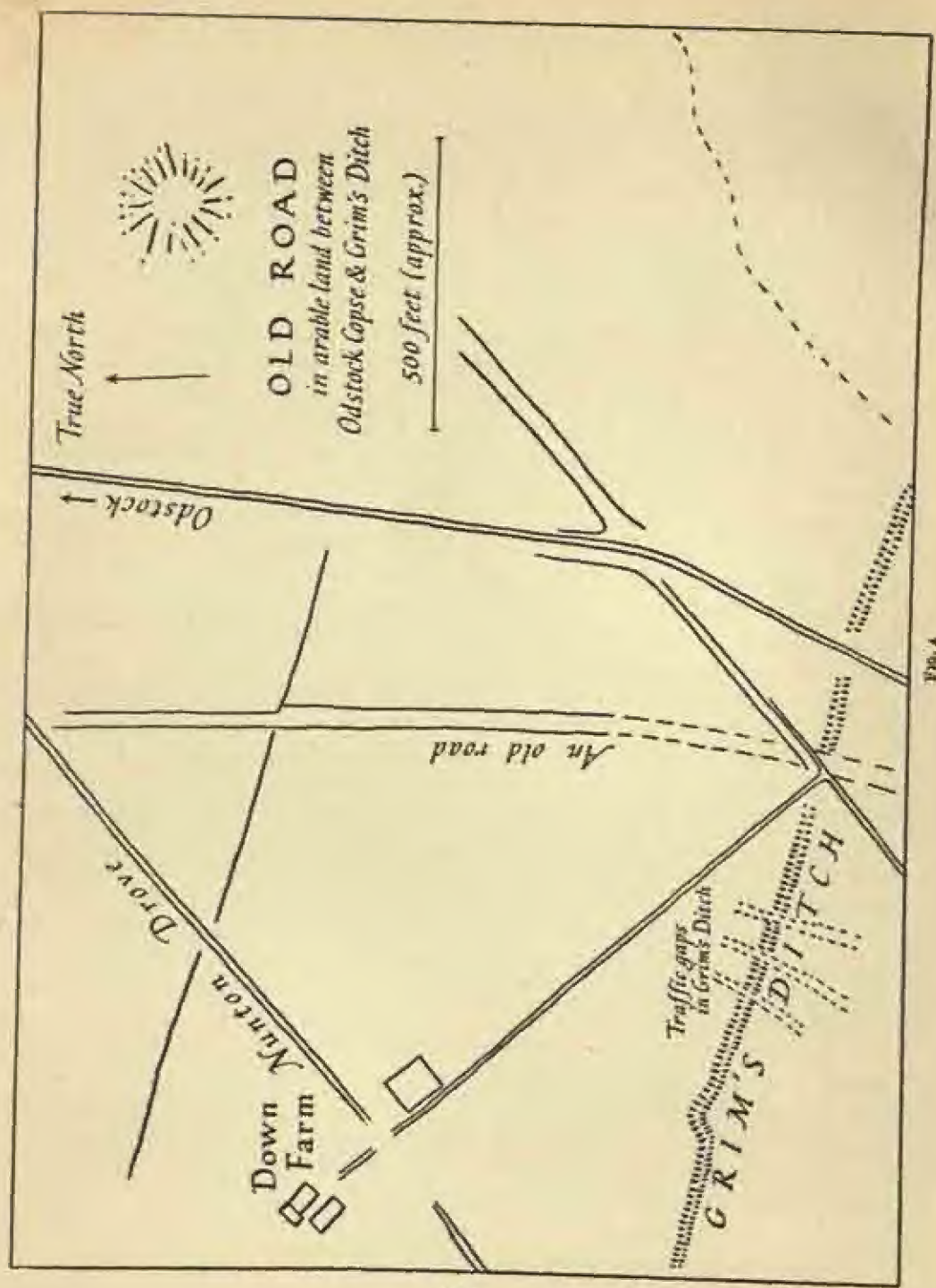


Fig. 4

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passes round the head of a valley out on to the open heath. Here, naturally, on the level the traffic-ruts become much fainter; but still they are discernible, and can be followed continuously, gradually converging on the Salisbury road which they cross obliquely near Golden Cross, a round mound called Jacob's barrow on the old one-inch Ordnance Map of 1807-8. From this point they descend by a winding spur to Pound bottom at the foot of the New Forest escarpment, and so to Cloven Hill.

But where exactly was Cerdices ford? There seem to have been *two* fords at Charford, each approached by an old road from the east. (Fig. 5). The southern ford was the one just described; it was approached from the east by an old dyked lane called Charbridge lane, and from the west by a lane past an old cottage called Colebrook. The northern ford seems to have been between Searchfield cottages and Lions lodge. Eastwards the road and county boundary coincide pretty closely; but in Rye Hill Copse the county boundary makes a short right-angle bend southwards, and its line is continued by a wide but shallow traffic-rut. There is another in Lodge Copse, parallel with and immediately north of the county boundary, which then sweeps round the head of a stream out on to the plateau at the (quite modern) hamlet of North Charford. The road continues southeastwards, joining the other at Golden Cross.

At which of these fords was the battle of 519 fought? I hoped, when I first set down these facts, that I had got a clue, if it could be interpreted; but after submitting it to Professor Stenton I feel obliged reluctantly to abandon it. The clue consisted in the name *fegerhilde ford* which occurs in the bounds of Downton.²¹ This had already been translated the 'ford of the victory' (*feger*=fair, *hilde*=battle), and it seemed to be an alternative name for Cerdices ford and to contain an echo of the battle of 519. But it must be translated differently, for *hilde*, though it undoubtedly does mean a battle, seems too poetical for a legal document.

There is, however, another bound-mark in the same document which may be cited in evidence of a battle. It is 'fyrdinges lea', and it lay west of the Avon and south of the Ebble, probably on Odstock down, in the vicinity of Odstock Copse. 'Fyrding' means an army on a war footing, and is a word that most aptly describes Cerdic's host. Near the place where 'fyrdinges lea' must have been there are

²¹ See note 3, p. 458.

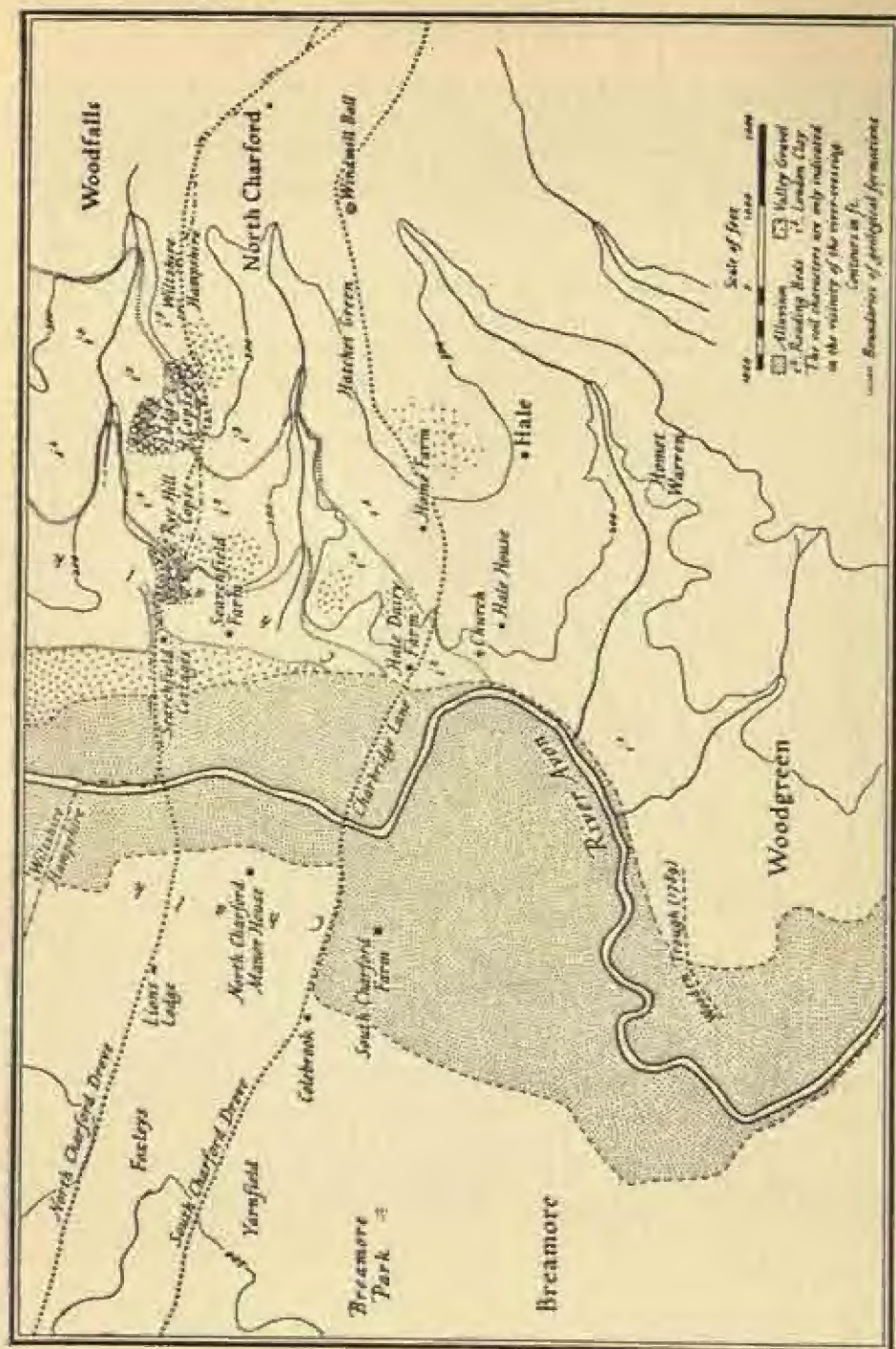


FIG. 3

THE TWO FORDS AT CHARFORD, AND THE OLD ROADS (SHOWN BY A DOTTED LINE) ACROSS THEM

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earthworks, and many traffic-ruts. (Plate vi). These I believe to be a continuation of the Cloven Way.

Whichever branch of the road we follow, we arrive ultimately at Wick Down, where we encounter a formidable earthwork called Grim's Ditch.²² (Plate II). But we come upon it from the rear. The ditch is to the west, and if this section of it belongs to our period and was built for military purposes—both of them assumptions—then it was made by people living on the east of it. The original vertical here was 8 feet, which seems rather big for a dyke of non-military purpose. I think it just conceivable that it may at this point belong to two periods; for elsewhere in its course this Grim's Ditch has the normal profile and characteristics of an earlier (prehistoric or Romano-British) boundary-ditch. Moreover elsewhere it has a bank on *both* sides, whereas here there are no traces of a bank on the west. The air-photograph (plate I) indicates that it was dug through some Celtic fields; but this does not carry us much further, and we must be content to note its presence and await enlightenment.

Across the arable land north of Wick Down the Cloven Way disappears, and we encounter the first serious check since we started. That it turned northwards at this point I have no doubt, and indeed there are some probable traces of it on air-photographs. (Plate vi). West of Odstock Copse it is quite plain, and soon after it merges into the existing road to Odstock and Salisbury.

It therefore crossed 'fyrdinges lea', and I suggest that this name does really contain an echo of the battle of Cerdices leah in 527. Cerdices leah must have been west of the Avon, for otherwise the battle of Charford was meaningless. It must also have been some distance south of Old Sarum, which was not captured till 552. One imagines that, having won a footing in the lower Avon valley, Cerdic's people consolidated themselves there; and that not until the best settlement-sites had all been occupied did they prepare to advance again. During this interval they may have settled in the Ebble valley. As evidence of pagan settlers may be cited the cemetery at Winklebury excavated by General Pitt-Rivers; and there are other scraps of evidence such as an urn from Bickton near Gorley (Avon Valley), a spearhead from Bishopston (Ebble valley) and a sword from

²² For a full description, with plan and sections and an account of its excavation, see Heywood Sumner, *Earthworks of Cranborne Chase*, 1913, 57-62.

CERDIC AND THE CLOVEN WAY

Toyd.²³ On a bluff called Witherington Rings, on the east side of the Avon 8 miles SE of Salisbury, were found in 1874 a skeleton with an iron sword and shield-boss, a knife, a ferule and an iron object like a strike-a-light.²⁴ The celebrated cemetery at Harnham Hill²⁵ lies *south* of the Avon, immediately by the side of our road just before it enters Salisbury.

Whether these finds must all necessarily belong to a period as early as the first half of the 6th century is, I think, doubtful. They are however legitimate evidence as things stand at present. They may therefore be attributed, with this qualification, to the years of inactivity between 519 and 552. During this period no fighting except the battle of Cerdices leah is recorded by the Chronicle, which is concerned only with events in the Isle of Wight (sub annis 530, 534, 544).

It would not be possible here to follow the fortunes of the Saxon (or Jutish?) adventurers further north; but a word must be said about their route. If the reader will consult a map of Salisbury Plain he will see that, although many old roads converge at Salisbury (*not* Old Sarum, where the Roman roads met), and may therefore be regarded as ending there, the modern road from Salisbury to Old Sarum is a direct prolongation of the Odstock road, that is to say, of our Cloven Way. This road continued northwards, probably along the line of the lost Roman road to Cunetio (at Mildenhall, where a pair of saucer-brooches were found in 1827). As a medieval and later road connecting Salisbury with Marlborough, its whole course through Everley and Burbage is well authenticated and well marked on the slopes by traffic-ruts. If the line be continued beyond Marlborough we reach Barbury Castle—the Beran burh where Cynric and Ceawlin defeated the Britons in 556.²⁶

We have seen that the ground between Totton and Barbury, a distance of nearly 60 miles, provides a reasonable line of advance along a road whose existence is proved by documentary references, and whose traffic-ruts (though in their present form doubtless of a later age) are

²³ These objects are now in the Salisbury Museum, and I am indebted to Mr Frank Stevens, the Curator, and Mr Heywood Sumner for telling me about them.

²⁴ Heywood Sumner, *New Forest*, 1917, 86-7. Extracts (not published elsewhere) from Dr H. P. Blackmore's note-book.

²⁵ *Archaeologia*, xxxv, 259, 475.

²⁶ Close by is Ellendun where Egbert of Wessex defeated Beornwulf of Mercia in 823: see Dr Grundy in *Arch. Journ.* lxxv, 181-7, where the northward continuation of the same road is described.

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still in evidence. All four mainland battles can be identified with places on this road, in three instances with certainty. The course of the Cloven Way from Totton may not seem the most direct route to Old Sarum, but it may well have been the shortest and the easiest. The route to be inferred from the Chronicle represents rather the general line of advance of an invading host, which in each campaign would follow the line of least resistance. Such would naturally be along an important and well-known highway. But each advance probably had a limited objective, consisting of the acquisition and settlement of new territory. The result in either case is much the same, but we must beware of attributing to the original settlers projects which they are most unlikely to have formed. They did not land with their luggage labelled 'Barbury via Old Sarum'. Good open arable land, however, is not to be found in abundance round the head of Southampton Water—at any rate on the west side. The need for expansion must soon have been felt; and as so often before in our history the dry but well-watered chalk lands exerted a powerful attraction, though they could only be taken by force from the Britons. The Cloven Way is the shortest route to the chalk, which is first encountered in Rye Hill Copse above Charford. The road may well have been in use in yet earlier times (though there is no evidence of this) as a thoroughfare between the villagers of Cranborne Chase and the sea. Tachbury may be the predecessor of Totton (fig. 6).

But even as an early route to Old Sarum there is much to be said for the Cloven Way. It is only four miles longer than the direct distance in a straight line. True, it involves crossing the Avon twice, and the Ebble once; but neither passage would have presented great difficulties, and in any case a more easterly route would have involved a crossing of the Winterbourne (thus cancelling out one of the others), and two separate belts of tangled, often waterlogged, country, on either side of Dean Hill. A group of settlers in the Totton district, if they wished to acquire fresh arable land, would most naturally turn to these regions, which, as we are told, they did in fact acquire.

For these reasons I conclude that the account in the Chronicle is a trustworthy historical description of events which actually took place. It is confirmed (in 'fyrdinges lea') by what may well be an early traditional record of these events set down within 150 years of their occurrence. It is not impossible that this same tradition may have survived to a later date when racial distinctions between Jute and Saxon had been obliterated, or were discreetly forgotten by the Chronicler.



CERDIC AND THE CLOVEN WAY

Surely no mere series of suggestive place-names could have given rise to a narrative that, when studied topographically, is seen to be eminently plausible.

Note 1. WIHTGARA BURH

In his *Asser* (pp. 172-5) Stevenson points out that 'it is not easy to derive [Carisbrooke] from Wihtgaraburh or Wihtgares-burh'. It might even be said to be impossible. The early forms of Carisbrooke (Caresbrook 13-14 cc.) suggest that it is compounded of two words (caerse broc) meaning, as Dr Grundy has suggested (*Arch. Journ.* LXXVIII, 145) 'watercress brook', a very suitable name for the small stream, now the Lukely brook, on which the village stands. At the time when these explanations were given the early form of the name of Carisbrooke Castle (as opposed to the village) was to be found in Worsley's *Isle of Wight* (1781) and the *Calendar of Miscellaneous Inquisitions*. This form is Wyghtberg; it occurs in a list of beacons compiled in 1324, and the original document in the Public Record Office (abstract in *Cal. Inq. Misc.*, 1916, II, 209-10, file 99, 10) has been published again in the current number of the Hampshire Field Club's *Proceedings* (vol. X, 1931, 255: 'The Beacon system in Hampshire', by H. T. White). There is no reason to doubt that Wyghtberg is here used to describe Carisbrooke Castle. The identification suits the context admirably, and the site lies in the Hundred of East Medina. 'There is now no village in the Isle of Wight with the suffix *-bury* or *-borough*' (Stevenson, p. 174), and we now know that Carisbrooke Castle occupies the site of a walled fortress of Roman construction. This doubtless was the *burh* of Wihtgara burh.

The name Wyghtberg plainly means the 'fortress of Wight'; and Wihtgar, unless he took his name from the island, becomes a very shady character indeed. There can, however, be little doubt that, whatever may be the exact significance of the Chronicle story, Wyghtberg is the Middle English derivative of Wihtgara burh.

Note 2. CLOVEN WAY

The name Cloven Way occurs twice in depositions relating to the out-bounds of Melchet Forest, A.D. 1620 (P.R.O., Exchequer Dep., Wilts, 17 Jas. 1, no. 21). 1. 'From Dearesall (now Dazel Corner) to Moore Close, and thence to Chilford Lake, from thence to Dunwoode, . . . to Deane Hill, from thence to Ashdeanes Cross, from thence to Langley Wood, from thence to Cloven Waie, and from thence to

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Deresall'. 2. 'From Shadie Oake to Langlie Woode, thence to Ashdeanes Cross, thence to Meane Wood, from thence to Gatmoore Pond, from thence to Donwoode Lake, thence to Abbots Pond, thence to Stagmoore Hill, thence to Dersill, thence to Cloven Waie, thence to Tymbrell Lane, and soe to the Shadie Oake aforesaid'. Many of the bound-marks in these documents quoted cannot be identified on the Ordnance Map; for instance, Chilford Lake, Ashdeanes Cross, Shadie Oake, Meane Wood, Gatmoore Pond, Tymbrell Lane. If any reader should, from local knowledge, be able to do this, or to obtain knowledge of old estate-maps of the 17th century, I should be glad to hear of it. The early topography of Melchet is both interesting and obscure.

Note 3. FEGERHILDE FORD

In the boundaries of a grant of land at Duntun (Downton, Wilts) made by Cenwalh (643-672) to Winchester Cathedral, the following passage occurs:—Anlang herepathes to fobban wylle. anlang herpathes to thas hagan ende to fegerhilde forde. on thone hagan. on ceorles hlawe. on cradan crundul. (Along the highway to Fobba's spring; along the highway to the end of the enclosure at the ford of the fair slope (?); along beside the enclosure to the churl's hill (or barrow); to crada's crundle (or, reading crawan, to the crow's crundle). The general course of the bounds is clear. Fobban wylle may be identical with the Folke well of the 1280 perambulations.

Unfortunately, however, there is no clue to the exact site of this well or spring. All we know is that the bounds are crossing the plateau between Bramshaw wood (brember wudu) and the Avon, and that they are following an old highway along it. As we saw above (p. 452) there are two possible courses, and we do not know which branch the bounds follow.

The bounds quoted above are published in full in Birch. *Cart. Sax.* i, 27. Similar versions are given in *Cart. Sax.* i, 391; iii, 862, 863, and in Kemble, *Cod. Dip.* iii, 698. The Saxon boundaries of Downton are discussed by the Rev. A. du Boulay Hill in *Wilts Arch. Mag.* xxxvi. It was he who first connected fegerhilde ford with Cerdic and the battle of 519; and it was his interpretation that I was tempted to adopt (fegerhilde ford=fair battle ford). Professor Stenton, however, says that the translation cannot stand. While naturally bowing to his authority, I cannot help hoping that the other explanation, which suits its context so admirably, may one day be found acceptable.



1, Copper-blade

2, 3, Beads, Mohenjo-daro

4, Sickle flint

5, Silver Ring

6, Toy animal, Kish

7, Rectangular bead, Mohenjo-daro

8, 9, Pottery heads, Kish

Further links between Ancient Sind, Sumer and elsewhere

by ERNEST MACKAY

DURING my leave to England in the spring of 1930, I revisited Iraq to acquaint myself further with the objects on view in the Baghdad Museum. As a result of excavations since I left that country the museum had acquired a large increase of material that I was not familiar with before, and I am now able to add to the links between the cultures of the Indus Valley and of Sumer which I have already pointed out in *Mohenjo-daro and the Indus Civilization*,¹ to be published almost immediately.

On plate 146, fig. 43, of that book there is reproduced a red carnelian bead, bearing a somewhat elaborate design in white, that was found in the uppermost levels of the *vs* area. Several almost exactly similar beads found by Woolley in the early graves at Ur are now in the Baghdad Museum. The slight difference between the two designs, in that there are concentric circles on this first found Indian bead of the type in place of the single circles on the specimens from Ur, is negligible in face of the general similarity; and especially in view of the fact that another of these beads has since been discovered at Mohenjo-daro with single circles, so that the design is identical with that on the beads from Ur (fig. 2).

It should be noted that on none of these beads do the oblique lines join the corners, an arrangement which, though somewhat unexpected, was probably regarded for some reason as essential to the design.

From the somewhat enlarged illustration of the second Indus Valley specimen, it will be seen that the craftsman was not entirely familiar with the design; its lines show evidence of hesitation. It is conceivable, indeed, that this particular specimen is a local copy of an imported bead.

¹ Edited by Sir John Marshall (Probsthain, 41 Great Russell street, W.C. 1). In the numerous references to plates in this book the abbreviation M-D is used.

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The beads from Mohenjo-daro appear to be slightly squarer than the Sumerian specimens, but it is possible that my hurried sketch of the latter has erred in this respect. The shapes of these beads are, of course, inconclusive as evidence of a connexion between the two countries, but the quite definite resemblance in design, especially in conjunction with the difficult technique, proves beyond any doubt that the beads found at Mohenjo-daro and Ur were made in one and the same country—whether this was India or Sumer we do not yet know; the beads may conceivably have come from a third country in the course of trade.

Woolley found the beads of this type in the Royal graves (c. 3500–3200 B.C.) of Ur. Personally, I would like to date these graves later for reasons to be stated at the end of this note. But in any case, we have in these beads proof that the civilization of Mohenjo-daro can hardly be dated later than 2750 B.C., and it is quite possible, if Woolley's chronology be correct, that even the latest levels of Mohenjo-daro date from before that time, for, it should be repeated, the beads in question came from the uppermost strata.

In connexion with these most interesting decorated carnelian beads,² Mr N. G. Majumdar of the Archaeological Survey of India has drawn my attention to a decorated carnelian bead found by him at a site called Chanhudaro, Nawab Shah district, Sind, the lowest levels of which belong to the Indus Valley culture. It is a flat oval bead with a figure-of-eight design, and he points out that it is exactly similar in shape, material and mode of decoration to a bead that I found at Kish and illustrated in my second report on that site.³ There are yet other examples of these decorated carnelian beads which serve to link the two civilizations; one⁴ exactly resembles, both in shape and in its marginal decoration, a bead found at Kish and approximately dated to 3000 B.C.⁵

Another design in carnelian unearthed at Kish⁶ also occurs, I believe, at Ur. It is singularly like a design that is exceedingly common at Mohenjo-daro, especially as shell inlay and on nose studs.⁷ There

² Mr Horace Beck prefers to call them 'etched carnelian'.

³ *Sumerian Palace and a Cemetery at Kish*: Field Museum, Chicago, pl. 60, f. 55.

⁴ M-D, pl. 146, f. 44.

⁵ *Sumerian Palace*, pl. 60, f. 62. The white portions of the bead are represented in black.

⁶ *Sumerian Palace*, pl. 60, f. 54. ⁷ M-D, pl. 152, f. 14; 155, f. 48, 49; 158, f. 10.

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is, however, the great difference between the Sumerian and Indus Valley examples that in the former there are five loops, whereas there are four in the latter. Judging from its popularity at Mohenjo-daro, the design must have been regarded with especial favour; and I have a suspicion that the bead from Kish was an inaccurate copy of those of Mohenjo-daro, although it should be remembered that the number five seems to have had an especial significance in Sumer. In either case, the Kish specimen could hardly have been made in India.

It would certainly be of great interest if we could discover whence these carnelian beads were imported. As I have already stated, they are extremely rare at Mohenjo-daro, and that they were highly valued is proved by their being imitated in steatite, on which the red ground for the design was produced by means of a burnished haematite paint. Perhaps Persia, where I believe the painting of carnelian is still carried on, was the source of supply both for Sumer and Sind; if so, that country could also have supplied Russia where, according to Mr Beck, decorated carnelian beads have been found, although some are of comparatively late date.⁸

The rectangular bead illustrated here (fig. 7) comes from the upper levels of Mohenjo-daro. It measures 1.6 ins. long by 0.26 ins. thick, and in shape it is very like a bead found in the grave of Queen Shubad at Ur (c. 3100 B.C.).⁹ I believe I am right in stating that these beads are both agate, though the one from Mohenjo-daro is not quite so translucent as the example from Ur. Beads of this shape are so very rare at Mohenjo-daro that they may have been imported.

Another bead shown (fig. 3) still more closely resembles beads that have been found at both Kish and Ur. Its shape is very peculiar in that the sharp edges of the longer sides are notched. This particular bead is made of some kind of paste which was at one time glazed; it is rhomboidal in section and measures 0.5 in. long by 0.1 in. thick. There are specimens of this type of bead from Ur in the Baghdad Museum, and two examples are figured in the Kish II report.¹⁰ The latter are made of shell and were dated to c. 3100 B.C., as they were found in the A graves. The three specimens that have been found at Mohenjo-daro are made of either alabaster or faience. The scarcity of

⁸ *Archaeologia*, 1929, LXXIX, 144.

⁹ *Museum Journal* (Univ. of Penn.), xx, nos. 3-4, pl. v.

¹⁰ *Sumerian Palace*, pl. 60, f. 39-40. Also p. 186.

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these beads at Mohenjo-daro as compared with their relative plentifulness in Sumer suggests that they came to India from the latter country. If this be so, the curious shape and the comparatively inexpensive materials in which they were made suggest that they had an amuletic rather than an aesthetic value. They are very similar in shape to the reversible sickle-flints (fig. 4) that are so often found on ancient Sumerian sites, and it is possible that the beads are actual copies of the flints. If so, it is not at all improbable that the beads were worn as fertility charms, since the sickle-flints were so closely associated with agriculture.

The terminals of flattened hemispherical shape¹¹ which are so frequently found at this site are made, as has already been stated, in gold and copper, and, more rarely, in faience. In the latter material they are either solid, except for the holes to take the strings, or else their sides are very thick, a necessary precaution with such a brittle material. I find no mention of terminals of this shape ever being found at early Mesopotamian sites. I myself found none at Kish, nor have any from Ur been illustrated. That they will eventually be found in that country, may, however, be considered as probable, especially as they have been found at Byblos, where they date from the period of the Fourth Dynasty of Egypt. These Syrian examples, which are of faience, are solid and have several holes pierced through the straight edge instead of through the terminal to its apex; *i.e.*, the ends of the strings of beads were tied to, and not passed through the terminals. Whether these terminals are Egyptian or Indian in origin or invented independently, is uncertain; hollow gold terminals which exactly resemble the examples from Mohenjo-daro have also lately been found at Gizeh in Egypt by Prof. Selim Hassan, who dates the tomb in which they were found to the Fourth Dynasty (*c.* 2900-2750).¹² The latter include—as far as I can judge from the published photographs—a long narrow gold plate pierced with holes to seal up the open end of the terminal, as at Mohenjo-daro.

Of still earlier date are some representations of hemispherical and triangular-shaped terminals with four or five undoubted strings of beads attached (fig. 10). These are depicted on four painted pottery sherds found at Tépé Douecya, some three kilometres north of Susa, and

¹¹ M-D, pl. 149, f. 1-3; 151, f. b.

¹² *Illustrated London News*, 21 February, 1931, p. 296.

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dated by M. de Mecquenem to the time of the First Period of the last site (c. 4250 B.C.).¹²

I have already compared terminals of this shape with some belonging to the Eighteenth Dynasty, but it is of interest to see that in Egypt the type goes back to much earlier days.

A copper blade¹⁴ found in one of the upper levels, though termed a spear-blade, may conceivably have been a knife (fig. 1). An exactly similar blade, but with a slightly longer tang, was found in the A mound at Kish and dated approximately to 3100 B.C.¹⁵



FIG. 10. FRAGMENTS OF PAINTED VASES. TÉPÉ DOUECYA

Until five years ago it seemed that cubical dice were unknown in the early civilizations, but we now have many examples from Mohenjo-daro,¹⁶ and one has been found at Ur, where it has been dated to an early period. The arrangement of the numbers in the specimen from Ur differs slightly from the arrangement on the dice from Mohenjo-daro, and a rosette even takes the place of one of the numbers. The only really ancient cubical die that I know of west of Suez is a pottery one with painted points, found at Tel el Amarna by the Egypt Exploration Society in 1921. Curiously enough, the numbers are apparently arranged in exactly the same way as at Mohenjo-daro, that is to say, 1 is opposite 2, 3 opposite 4, and probably 5 opposite 6.¹⁷ Sir Flinders Petrie has illustrated a number of cubical dice which he has found or

¹² *Mém. Dél. en Perse*, t. XX, p. 113, f. 19 (6-9).

¹⁴ M.-D., pl. 136, f. 3.

¹⁵ *Sumerian Palace*, pl. 39, group 3, f. 4.

¹⁶ M.-D., pl. 153, f. 7-10.

¹⁷ I could not see one side of this die in the case in which it is kept in the Ashmolean Museum, Oxford.

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bought in Egypt,¹⁸ but they are all of Ptolemaic or Roman date. Some are numbered as at Mohenjo-daro, some in the modern way, and others quite indifferently. The fact that the cubical die occurs as far back as the Eighteenth Dynasty in Egypt is important, as it disposes of the suggestion that the Greeks were the means of introducing it into the West.

I took the opportunity when at Baghdad to examine the tetrahedron of pink limestone found by Woolley at Tell al'Ubaid and described by him in the report on that site,¹⁹ and I find that in shape it is exactly similar to the many that have now been found at Mohenjo-daro.²⁰ Of these only one specimen, however, is made of pink limestone; the remainder were made of a paste which was coated with a glaze, once either green or blue in colour. Gamesmen of the same form and material have also been unearthed by Watelin at Kish. Whether the peculiar shape of these tetrahedral gamesmen originated in Sumer or India, it is impossible to say. I am not aware of their occurring outside these two countries.

When at Kish, I found a number of thick pottery rings, whose internal diameters average 1 in., and dated them to approximately 3100 B.C. As they are much too small to have been worn as bracelets, and for the same reason would have been unsatisfactory as stands for pointed and round-based pottery, it seems likely that they were used in a game—like quoits.²¹ Rings of the same type and material are frequently found at Mohenjo-daro,²² and it is possible that here also they were used as playthings; experiment has shown them to be practically useless as pottery stands.

It has already been pointed out that a framed Greek cross was used as a decorative motif at Mohenjo-daro, and that the same device was also well known in ancient Sumer, as well as being used as an ornament on seals of the Kassite period. But its repetition as a decorative design, as, for instance, on the square bezel of the silver ring²³ is unusual. Nevertheless, it has been found duplicated on one of the squares of shell of a gaming board (no. U9907) discovered by Woolley at Ur and dated by him to between 3500 and 3200 B.C. Additional interest is given to the design in this latter case by the

¹⁸ 'Objects of Daily Use', pl. 49.

¹⁹ Hall and Woolley, *Excavations at Ur*, I, 211. (T.O. 403).

²⁰ M-D, pl. 153, f. 40, 41.

²¹ *Sumerian Palace*, p. 206; pl. 44, f. 2.

²² M-D, pl. 152, f. 16, top.

²³ M-D, pl. 148, A, f. 13.

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presence of numerous svastikas that fill in the spaces between the crosses. Though these are not present in the design on the silver ring (fig. 5) and squares take their place, there is the possibility that the svastika motif originated in India, even though it appears also on the early painted pottery of Elam²⁴ as well as that of Sumer.²⁵ Both the appearance of the Greek cross motif and its arrangement on the objects cited from Sind and Sumer add an undoubted link between the two countries, and a very early one at that.

With reference to the svastika, attention should be called to a steatite seal from Kish, now in the Baghdad Museum, which bears this symbol. This seal, both in shape and the design upon it, exactly resembles the little square seals of steatite and glazed paste that are so frequently found at Mohenjo-daro.²⁶ I do not think that I err in regarding the Kish example, which was found by Watelin, as either of Indian workmanship or made locally for an Indian resident in Sumer.

Feeding cups with a spout projecting upwards from the base²⁷ are well known at Mohenjo-daro. It was, therefore, pleasing to find that the magnificent gold specimen found at Ur is not an isolated example, but that this type of cup was also made there in pottery—again, at a very early period.

We have already shown that the working of shell was common to early India and ancient Sumer, this material being used in both these countries chiefly for inlay. A form of ladle made in shell, which is frequently found at Mohenjo-daro,²⁸ is exactly duplicated in examples found at both Kish and Ur.

Again, the capping of finely cut, variegated hardstone beads with gold²⁹ was also practised in Sumer, for Woolley has found such beads in early graves at Ur. Indeed, the close resemblance of some of these capped beads to those of Mohenjo-daro leads one to suspect that they were actually of Indian workmanship. I base this suggestion on the fact that they are more common at Mohenjo-daro than in Sumer.

The curious perforated vessels shown³⁰ are very closely allied to perforated vessels found at Kish³¹, especially in the fact that besides the numerous holes in the sides there is also a large hole in the base, which suggests that by this means they were supported on a rod or

²⁴ J. de Morgan; *La Préhistoire Orientale*, t. II, p. 266, fig. 293.

²⁵ Herzfeld, *Die Ausgrabungen von Samarra*, v, 16, 17, etc.

²⁶ M-D, pl. 114, f. 307-15.

²⁷ M-D, pl. 83, f. 20.

²⁸ M-D, pl. 156, f. 26-29.

²⁹ M-D, pl. 149.

³⁰ M-D, pl. 84, f. 3-18.

³¹ *Sumerian Palace*, pl. 54, f. 36.

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something similar. The shapes are certainly different, but this fact is of little consequence in view of the general difference in the shapes of the pottery used by the Indus Valley peoples from the wares found in the early cemeteries at Ur and in the A graves at Kish. I have suggested, from evidence obtained by Sir Aurel Stein in southern Baluchistan, that these perforated vessels were used as heaters. But I am now inclined to believe that they served as strainers for curds. We know from the presence of numerous models of oxen in their cities that cattle-raising was practised by the Indus Valley people; milk was, therefore, in all probability as much used by them as by the Sumerians throughout their history.

The carefully modelled panther heads made in pottery³² are obviously intended to be affixed to a backing of some kind, since they are both hollow behind. Their striking resemblance to similar masks found at Ur, though the latter are of silver, provides a further link between the cultures of Sumer and ancient Sind. The silver heads from Ur,³³ which are dated to c. 3500 B.C., were once affixed to the front of a royal chariot. We have no reason to suppose that the Mohenjo-daro heads were used for the same purpose; indeed, the humbler material of which they are made suggests that they beautified something much less important, and we hope to discover later on what that was. I have already compared the other type of mask found at Mohenjo-daro, i.e., a human head with the horns of a bull, to the similar metal heads from Ur, a parallel which certainly suggests that a deity of the same form, if not with the same attributes, was common to the two cultures.

The little pottery figures of doves with outstretched wings, that are so frequently found at Mohenjo-daro³⁴ are, as I have already explained, known in early Crete as well as at Musyan in Elam. It is, therefore, interesting to see that Woolley has found a similar figure at Ur beneath a deposit left by a flood. The only difference between the Indus Valley specimens and the one from Ur, beyond that of the kind of clay employed, is that the latter is painted. It has a hole in its base, doubtless that it might be supported on a stick; and we have a similar hole in many of the examples at Mohenjo-daro, though it is lacking in the particular specimen illustrated. Another form of the same bird,

³² M-D, pl. 96, f. 5, 6.

³³ *Museum Journal*, Philadelphia, XIX, no. 1, p. 16.

³⁴ M-D, pl. 96, f. 1.

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with closed wings, and set on a little pedestal, is common both at Kish³⁵ and Mohenjo-daro.³⁶ In the latter city a small hole in the back near the tail sometimes turned the model into a whistle, but model birds of the same shape are found without this added device.

In ancient Sumer the dove seems to have been included in offerings to the various deities, and Eannatum states that he offered two to the goddess Ninkharsag.³⁷ At a yet earlier date figures of the bird occur in the limestone inlay which once decorated the temple of al'Ubaid, that was also dedicated to the goddess Ninkharsag³⁸; and that the bird was sacred in Elam seems certain from the lapis-lazuli and gold figure found at Susa by the French expedition.³⁹

The close association of the dove with the cult of the Mother-goddess in Crete, Sumer, and elsewhere in the Near and Middle East, in Sardinia, and even further west, together with the fact that so many models of this bird are found at Mohenjo-daro, leads us further to believe that the goddess whose semi-nude, bejewelled pottery images are such a feature of Mohenjo-daro and Harappa was also a Mother-goddess. The great respect in which the dove is held even at the present day in Northern India by Muhammedans and Hindus alike is quite possibly a survival of this cult.⁴⁰ Perhaps there was a closer connexion than we at present know of between the Sumerian goddess Ninkharsag and the goddess of the Indus Valley people.

The fine steatite head⁴¹ has peculiar, half-closed eyes, which according to Mr Ramprasad Chanda proves the practice of 'Yoga' among the people of the Indus Valley.⁴² But the curious figurines found by Woolley in graves of the al'Ubaid II period at Ur are also represented with this very narrow eye.⁴³ Woolley describes these heads as reptilian, but, personally, I believe that they are intended to represent human heads, a view which is somewhat corroborated by a human figure holding a bow and arrow which Dr Herzfeld found on a painted sherd at Susa, for the shapes of the head and head-dress of this

³⁵ *Sumerian Palace*, pl. 47, f. 10.

³⁶ M-D, pl. 153, f. 17-18.

³⁷ King, *Sumer and Akkad*, pp. 128-9.

³⁸ Hall and Woolley, *Ur Excavations*, I, pl. 33.

³⁹ *Mém. Dél. en Perse*, t. 7, pl. 25, f. 1, 2.

⁴⁰ Crooke, *Folklore of Northern India*, II, 246.

⁴¹ M-D, pl. 98, f. 1-4.

⁴² *Mem. Arch. Surv. Ind.* no. 41.

⁴³ *Antiquaries Journal*, vol. x, pl. 48, f. a-d. See also *Ur Excavations* (al'Ubaid), pl. 48. (T.O. 405).

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latter figure are identical with those of the Ur figurines.⁴⁴ Possibly these Sumerian figures were intended to represent the autochthonous inhabitants of the country.

We have yet a fourth example of this very unusual eye in a pottery head that I found some time ago at Kish, and that I believe is now in the Ashmolean Museum at Oxford (figs. 8, 9). Unfortunately, this curious head cannot be accurately dated, but that it is archaic admits of no doubt. The fan-like head-dress or arrangement of the hair is also very unusual and has something in common with the head-dress worn by some of the female figurines of Mohenjo-daro.

I cannot but think that the unusual narrowing of the eye in all these very early examples suggests its association with some definite idea held in common, but whether religious or racial it is impossible to say. The human figures of about 3100 B.C. portrayed on jar handles at Kish, though all female, are, it is true, without exception represented with round, open eyes, such as are generally associated with Sumerian sculpture.⁴⁵ The absence of the mouth in the above mentioned pottery head from Kish is not surprising in view of the fact that this feature is also frequently absent in the figures on the jar-handles of the A cemetery. The figures of the inlaid plaque from the palace at Kish have unusually small mouths, and so has the large painted terra-cotta head since found there by Watelin.⁴⁶ Indeed, the mouth seems to have been treated as a somewhat unimportant feature in some of the early representations of the human head in Sumer. I would like to point out in addition that, so far as it is possible to judge from a photograph, the ears of this last mentioned head are exactly the same roughly modelled, saucer-like features as the ears of the statue heads found at Mohenjo-daro.

Though not strictly germane to this article, it is necessary to mention that the handled vessels from Kish had a wider range than was at first realized. One such vessel has been found at Ur, and a handle at Susa, the latter dated to about 3000 B.C. Apparently Contenau, who mentions it, has not realized that this is a handle of a jar of the Kish type.⁴⁷ These curious vessels may have been

⁴⁴ *Mém. Dél. en Perse*, t. XIII, p. 37, f. 129.

⁴⁵ *Sumerian Palace*, pl. 45.

⁴⁶ 'Rapport sur les Fouilles de Kish', *Journal Asiatique*, 1929, f. 4.

⁴⁷ Contenau, *Manuel*, p. 178, f. 107. A complete specimen of one of these 'granny' jars has lately been found at Susa. *ANTIQUITY*, Sept. 1931, pl. IX.

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taken to both Ur and Susa as they seem not to have been made in those places.

The stone jar-borer⁴⁸ has already been compared with one from Egypt, but of much later date. Woolley has also found one at a site named Merajib, 11 miles south of Ur, which is a very early example indeed,⁴⁹ and of very much the same in shape, as I have seen for myself. Though not of great importance as evidence in the dating of Mohenjo-daro, for the reason that the identical shape is known at a later period in Egypt, this borer proves that the same class of implement was used in the two countries. In all probability these stone grinders were heavily weighted and rotated by means of a crank; the same method was practised by the ancient Egyptians, who on their tomb walls have given us many illustrations of how they were used.⁵⁰ Woolley suggests that these borers were worked by the aid of a bow and cord. I think that the friction that would be created by the rotation of such a heavy object would be too much for the bow and cord method.

The elaborate figure-of-eight design seen on a copper tablet⁵¹ cannot be exactly duplicated in Sumer. The simple outline was, however, frequently used at Mohenjo-daro to ornament beads, and it also appears, as has already been stated in this note, on a painted carnelian bead from Kish. Of great importance is the fact that identically the same design as that incised on the copper tablet appears on two scarabs approximately dated by Petrie to the Thirteenth to Seventeenth Dynasties of Egypt, where one would hardly have expected it.⁵² It is also painted on a stone flake, dated to the Eighteenth Dynasty found at Tell el Amarna in 1922 by the Egypt Exploration Society and is now in the Ashmolean Museum, Oxford.

I have no doubt that this same cord pattern will eventually come to light in both Elam and Sumer. That it took so long to travel to Egypt from its occurrence in India in the earlier part of the third millennium B.C. until the second millennium B.C., is a point of interest; but in time this period may be considerably reduced, for something very like this design, though more complex, occurs on a predynastic vase from Egypt, as I have already noted. This particular predynastic

⁴⁸ M-D, pl. 130, f. 35.

⁴⁹ *Antiquaries Journal*, x, 339. It would seem to be of the Jemdet Nasr period.

⁵⁰ *Ancient Egypt*, 1922, 18, f. 40. See also Clarke and Engelbach, *Ancient Egyptian Masonry*, 204.

⁵¹ M-D, pl. 118, f. 5.

⁵² Petrie, *Buttons and Design Scarabs*, pl. 8, f. 129-30.

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vase is closely dated by both shape and style of painting to the second, or middle predynastic period, as Hornblower has already pointed out,⁵² and Petrie has more than once suggested that the home of the people of this sub-period was 'somewhere bordering on the Red Sea', or 'possibly southern Sinai or the northern Hedjaz'.⁵³ In short, he regards the people of the second predynastic period as of Asiatic origin. Indeed, there is increasing evidence that certain ideas from Middle Asia did actually filter slowly to Egypt, probably in most cases via Syria; but whether these ideas were Indian in origin or Mesopotamian, with which we must couple Elam, we do not know.

The clay animal on wheels, which Woolley found at a very early level at Ur and described as a zoo-morphic vase,⁵⁴ has its almost exact counterpart in a broken toy that I found in the debris covering the Sumerian palace at Kish⁵⁵ (fig. 6). I have described the Kish figure as a ram, to which opinion I still adhere, and the Ur figure seems to me to represent the same animal. The Kish specimen is certainly not a vase and was only made hollow for the sake of lightness, which is almost a necessity in a toy made for a small child. Woolley dates his example to the period of the royal cemetery, or perhaps even earlier (c. 3500-3200 B.C.); but the Kish specimen must have been considerably later, and though it cannot be exactly dated, I should hesitate to put it earlier than about 3100 B.C.

These toy animals from Sumer are closely comparable with the toy rams, also on wheels, that we occasionally find at Mohenjo-daro.⁵⁷ The fact that two wheels were preferred to four in ancient Sind matters little; we have the same animal represented and also with a hollow body for the sake of lightness. Imagination, however, was given wider range in the Sind examples in that a bird's tail is introduced which brings them into the category of 'composite' animals, of which the people of Mohenjo-daro, and be it noted, of Sumer also, were so fond.

The decorative design of four-petalled rosettes that is such a common feature on the painted pottery of Mohenjo-daro⁵⁸ is also met with on painted pottery from Tell Zeidan on the eastern bank of the lower Balikh river in North Syria. This ware is dated by Albright to 3500 B.C.,⁵⁹ which, it should be noted, agrees in date with some of my

⁵² *Ancient Egypt*, 1928, 68-69.

⁵³ *Antiquaries Journal*, x, pl. 41 a.

⁵⁷ M-D, pl. 153, f. 24.

⁵⁹ *Man*, March 1926, pl. c, f. 1.

⁵⁴ *Prehistoric Egypt*, 48.

⁵⁵ *Sumerian Palace*, pl. 46, f. 3.

⁵⁸ M-D, pl. 91, f. 9, 10.

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other Sumerian connexions. As we know, pottery designs were adopted by neighbouring peoples, but it is interesting to find a motif that was in such common use in the Indus Valley occurring as far away as northern Syria, and not in the countries between. Such a simple motif may, however, have been designed independently.

In connexion with the two pieces of glazed pottery,⁶⁰ the method of whose ornamentation has already been described, I should like to point out that the same device of partially removing a dark-coloured slip with the aid of a comb or other such instrument is also known at Ur. This 'reserved slip ware', as it is termed, occurs in Woolley's stratum E, a very early level (before 3500 B.C.),⁶¹ and does not differ in general technique from the similar ware at Mohenjo-daro, though the latter was glazed. We have, however, found one example where a light slip has been removed in parts from the surface of unglazed pottery instead of, as at Kish, a dark slip from a lighter ware. It is of interest to note that this 'reserved slip' ware, whether glazed or not, is only found in the lower levels of Mohenjo-daro, which appear to correspond with those of Ur.

I have already remarked that as far as can be seen, no strict comparison can be made between the shapes of the pottery from Mohenjo-daro and the early wares of Sumer and Elam. There is, however, one exception. We find, principally in the upper levels of Mohenjo-daro, though it is also known in the intermediate phases, a type of vessel fashioned sometimes in copper and bronze, but more generally made in clay.⁶² An alabaster vessel in the Baghdad Museum, which is labelled as having come from Khaffaga near the Diala river, corresponds very closely in shape with this Indian type. Though I do not know its exact date, it appears to me to be archaic.⁶³

These additional facts, together with the connexions already pointed out in the book, prove beyond question that the upper occupations at Mohenjo-daro are contemporary with the earlier ones of Ur and Kish. I connect these two latter sites because I am convinced that the graves of Woolley's third series, the 'gold graves', as they are often termed, as well as his second series, belong to very much the same period as

⁶⁰ M-D, pl. 159, f. 1, 2.

⁶¹ *Antiquaries Journal*, x, 331 and 339.

⁶² M-D, pl. 86, f. 1, 22; pl. 140, f. 18.

⁶³ I am given to understand that it was bought by the museum.

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the A graves at Kish, though he appears to regard the latter as contemporaneous only with his second series (dated 3100 B.C.). There is, I consider, too great a similarity between the objects found in the A cemetery and the third series of graves at Ur for any great space of time to have intervened between them. It is true that many articles found in these latter graves, which Woolley dates between 3500 B.C. and 3200 B.C., have not been found at Kish, but their absence is easily explained by the fact that the people buried in the 'gold graves' at Ur were immeasurably richer than those at Kish, where the graves were obviously those of comparatively poor people.

I have no very great objection to the later limit of Woolley's dating of this third series, namely 3200 B.C. Indeed, at the time of excavating it, I provisionally dated the A cemetery to about 3100 B.C. But in my opinion not more than two hundred years at the outside should be allowed to cover what differences there are between the grave-furnishings of the two cemeteries.

We have assigned the somewhat conservative date, 2750 B.C., to the upper levels of Mohenjo-daro, but we may have to increase it in view of the many connexions between that place and the early periods of Kish and Ur. In the present state of our knowledge, the connexions that have now been established between the two countries do not allow of any other course. On the other hand, when the chronology of the Sumerian graves is finally settled, their dates may be brought nearer to our estimate of the date of the late levels of the Indus civilization. Personally, I think there will be a compromise between 3100 B.C. and 2750 B.C., with a bias towards the later date.

Since the above lines were written, Watelin has kindly sent me a photograph of a seal of the Indus Valley type that he has lately found at Kish. There is no doubt whatever that this particular seal was made and engraved in India. The perplexing fact arises, however, that it was found at a level which Watelin states cannot be earlier than 2400 B.C. The first seal of this type to be found at Kish came from a level dated approximately to 2100 B.C., but as it was found in the filling of foundations of this date, there was reason to think that the seal itself was of earlier date and had lain for some time in the earth that was used for the filling. That it was already old when it found its last resting place at Kish is proved by its broken and badly weathered condition.⁴⁴

⁴⁴ *J.R.A.S.*, 1925, p. 697.

ANCIENT SIND, SUMER AND ELSEWHERE

As the characters and animals on these Indian seals must have been more or less strange to most of the Sumerians, it is not unlikely that whenever they were picked up at a later date they were kept as curios.⁴³

For the reasons already given, I cannot see that it is possible to date the civilization of Mohenjo-daro, as now known to us, as late as 2400 B.C. Woolley also states that the Indus Valley civilization is, 'as proved by the seals found in the two countries, contemporary with that of the Ur graves and of Mes-anni-padda'.⁴⁴ So late a dating as 2400 B.C. would imply that if the date Woolley assigns to the royal graves at Ur, namely 3500 to 3200 B.C., be correct, the Indus valley people used certain designs and objects almost a millennium later than these appeared in Sumer, with practically no change in their style and execution, which on the face of it appears highly improbable. The script alone would have been profoundly modified in so long a period of time.

⁴³For a parallel, note the antiquarian tastes of Nabonidus and his daughter: Woolley, *Antiquaries Journal*, Oct. 1925, p. 384.

⁴⁴*The Sumerians*, p. 46.

Ladle Hill—an unfinished hillfort

by STUART PIGGOTT

EVERY archaeologist has at one time or another no doubt idly toyed with the attractive, if utterly impractical, idea of travelling backwards in time, and has seen himself, arrived within his 'period', solving many problems by merely looking around him. Students of earthworks would give much to have been present at the building of a hillfort, for even if conversation with the builders were impossible, a great deal might be learned by watching the work in progress. We today, dealing with hillforts completed some two thousand years ago, find it difficult even after excavation to visualize the exact methods of construction of these defences.

There is however one example of a hillfort which is in that same unfinished state as our time-traveller might find were he on the Wessex Downs in the first few centuries B.C. True that he (lucky man!) would find the ditches newly dug and the rampart fresh piled chalk, while we today see them grass-grown and denuded; but nevertheless these earthworks on Ladle Hill do help us to understand how they made those great green ramparts to protect their villages.

Ladle Hill,¹ on which is the unfinished hillfort described here, is a part of the Hampshire Highlands—the chalk hills lying between Salisbury Plain and the Weald—which constitute a great tilted uneven plateau intersected by valleys, with a steep escarpment to the north.² The road from Winchester to Newbury and Oxford runs north through the ridge along a valley between two hills—Beacon Hill, above Highclere, on the west and Ladle Hill on the east. On Beacon Hill is a fine and typical hillfort: on Ladle Hill the earthworks which puzzled archaeologists until aerial observation and photography disentangled them and revealed their true nature.

As well as these main earthworks, there are other evidences of early occupation of the hill, and some of these have a bearing

¹ Map references are—O.S. 1-inch, 113 H.4; 6-inch IX SW.

² This district is the subject of a geographical study by Mr O. G. S. Crawford—*The Andover District*, 1922.

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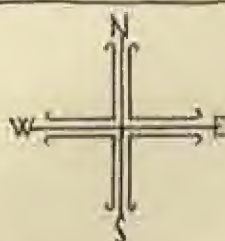
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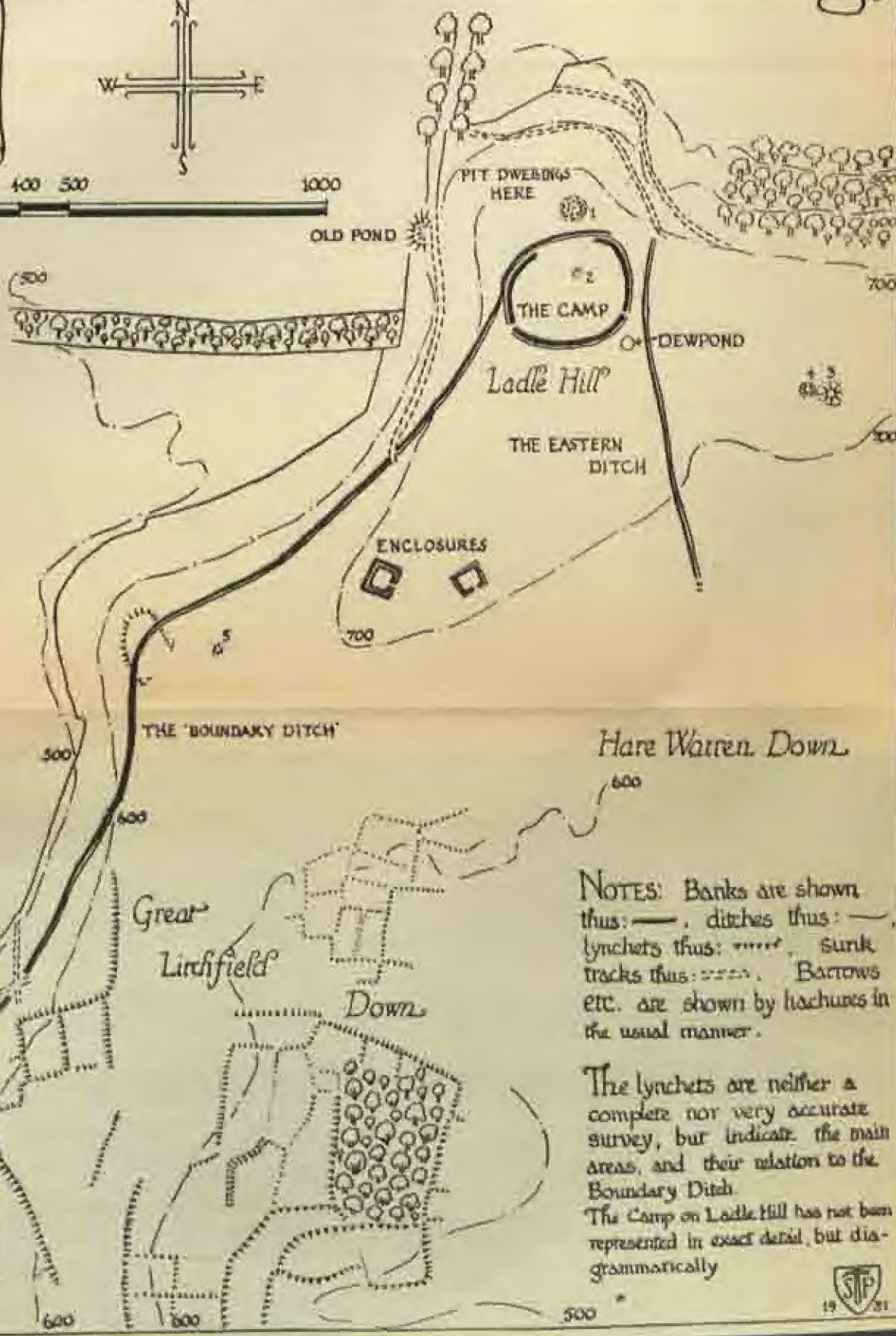
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LADLE HILL AND ITS NEIGHBOURING EARTHWORKS



100 50 0 100 200 300 400 500 1000
SCALE OF YARDS

To Newbury
From Winchester



NOTES: Banks are shown thus: —, ditches thus: —, lynchets thus: —, sunk tracks thus: —. Barrows etc. are shown by hachures in the usual manner.

The lynchets are neither a complete nor very accurate survey, but indicate the main areas, and their relation to the Boundary Ditch. The Camp on Ladle Hill has not been represented in exact detail, but diagrammatically.



FIG. 1. GENERAL PLAN OF THE SITE

LADLE HILL

on the building of the hillfort. The area included in the general plan (fig. 1) covers the big spur of downland comprising Ladle Hill proper, Great Litchfield Down and Hare Warren Down. Within this area, in addition to the Ladle Hill Camp, are five round barrows of various types, a large group of lynchets, two roughly square earthworks, two earthworks of 'boundary ditch' type, and several sunk tracks ascending the slopes. Below the Camp on the west is an ancient catchment pond, and on the nose of the hill a number of hut sites.

THE CAMP

When first seen from the ground the earthworks on the head of Ladle Hill are certainly most puzzling. From the foot of the hill to the north the hill appears to be crowned with a group of round barrows, and when the summit is reached an oval area some 200 by 250 yards is seen to be surrounded by a bank and ditch, but one of most unusual type. Instead of the usual even furrow of the ditch and the smooth swell of the rampart within, there is here a string of troughs and hollows, their irregularities echoed by the hummocks and lumps that make up the rampart, and which from a distance suggest barrows. Inside, the area of the Camp is even worse confusion, with low irregular mounds sprawling everywhere a few yards behind the rampart. In places there is no true rampart at all, only these shapeless heaps 40 feet away from the irregular ditch.

Observation from the ground alone was bound to lead to faulty conclusions as to the true meaning of this tangle of banks and irregular chain of ditches. Dr Williams-Freeman³ suggested that the Camp had been partly destroyed, and the rampart thrown into the ditch in places, forming the causeways which appear opposite the gaps in the bank. The present writer, when describing the earthworks on Butser Hill, Hants,⁴ advanced a theory of two periods of construction for a fortification there, and cited Ladle Hill as a parallel example, suggesting that it was a Neolithic causewayed camp refortified at a later date by having the silting dug from the original ditches and heaped on the denuded rampart. Neither theory was more than tentative, and neither accounted for all the phenomena of the site.

The excellent air-photographs taken in 1930 however showed the site, metaphorically as well as literally, from a new point of view. A

³ *Field Archaeology of Hants*, pp. 78-9, 380.

⁴ *ANTIQUITY*, IV, 187-200.

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study of these photographs and of the remains themselves on the ground enabled the writer and Mr O. G. S. Crawford to work out a theory which takes into account all features of the earthworks (which previous theories did not), and provides an explanation which not only fits the facts but which was proved more than once in the course of the work by hitherto unnoticed pieces of evidence that came to light.

It was seen that on Ladle Hill we had an example, probably unique of its kind, of a hillfort abandoned half-way through its construction, and so showing features which in the complete work would be concealed. The skeleton of the body, the rough sketch beneath the paint, is visible, and gives us some hints as to the methods employed by the builders of the Early Iron Age camps. It should be mentioned here that we have no direct evidence of date for the work. As will be described below, it does fit into a chronological sequence with other earthworks on the hill, and general characteristics point to the Early Iron Age. A closer dating cannot be arrived at with certainty without excavation.

THE METHODS OF CONSTRUCTION

Plate III and figs. 2, 3

The examination of the earthworks gave evidence on the following points :—

1. The choice of the site and utilization of an existing ' boundary ditch ' as part of the defences.
2. The method by which the area of the Camp was delimited by a ' setting-out ditch ' before the main ditch was dug.
3. The methods employed in digging the main ditch.
4. The disposal of the excavated material.
5. The actual building of the rampart.

While some of the results are what might have been expected, others, notably the selection of material in the make-up of the rampart, are novel and of great interest.

1. **THE CHOICE OF THE SITE AND THE BOUNDARY DITCH.** The top of Ladle Hill, within the 700-foot contour, is admirably suited for defence, and its selection as a site for a hillfort is to be expected rather than wondered at. But apart from the natural suitability of the position, the makers of the fort appear to have been further influenced in their

LADLE HILL CAMP

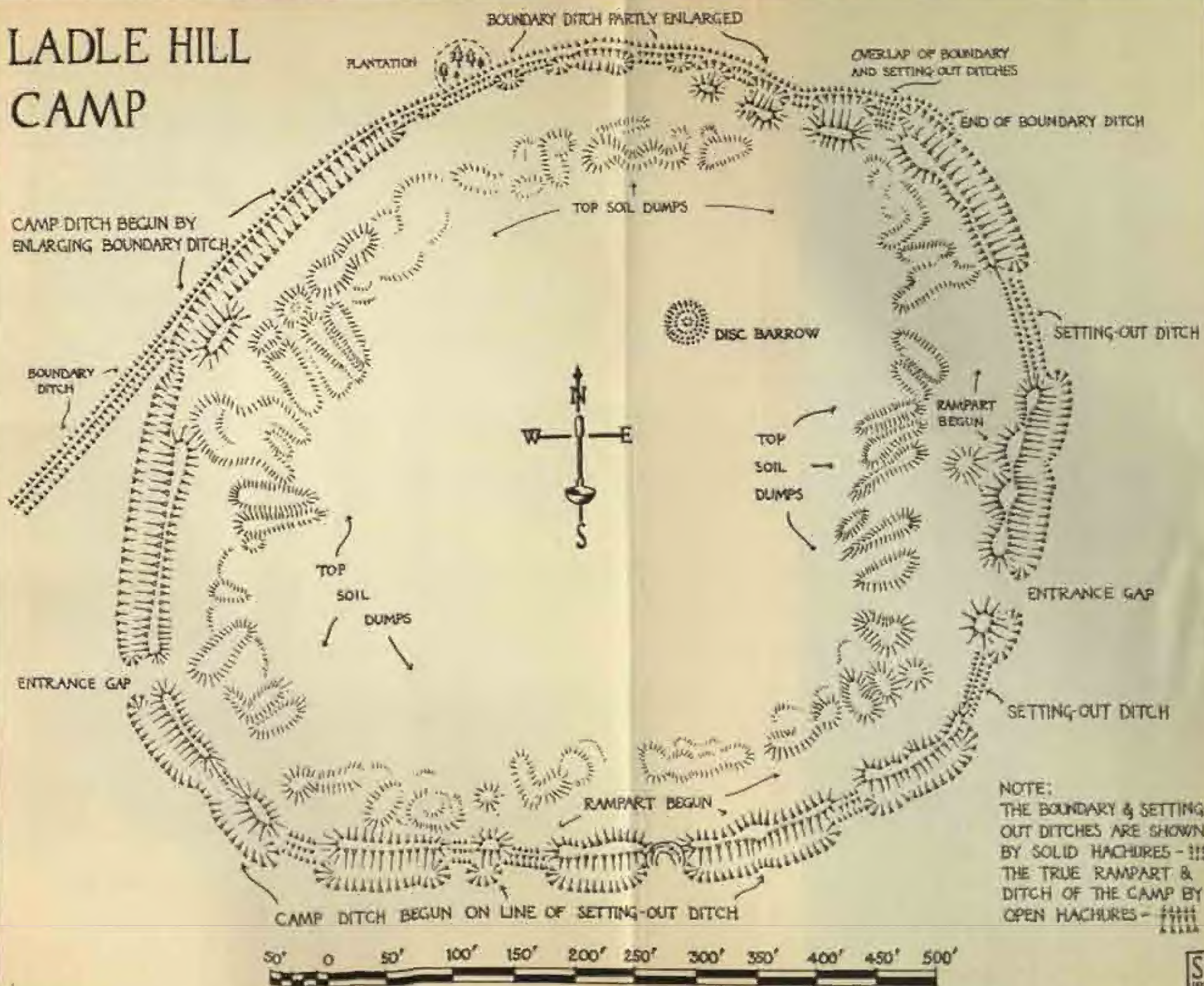


FIG. 4. DETAIL PLAN OF CAMP

CAMP
TABLE HILL



LADLE HILL

choice by a pre-existing earthwork. The general plan (fig. 1) shows the course of a bank and ditch, marked as The Boundary Ditch, along the western edge of Great Litchfield Down and on to Ladle Hill itself. This is a bank and ditch of slight profile, and now much silted up for most of its course, the ditch averaging some 2 feet below the crest of the bank, and with an overall measurement of 20 feet. It seems to be a linear earthwork of the class of 'Boundary Ditches' common in Wessex, which sometimes (as here) seem to begin, wander and end for no obvious reason. Its south end is at the bottom of a small valley running east into the down: there seems to be no reason for its stopping there, but no trace can be found further south. From here it runs north, following the western edge of the down, running below the crest but above the steep fall into the valley, and in its course cuts through lynchets at three points, thus showing it to be later in date. At one point it is itself cut through by sunk ways that run diagonally up the hill slope. These intersections are well shown in the air photograph, plate II.

Where the Boundary Ditch reaches the top of Ladle Hill it appears to run into the ditch of the hillfort. A study of the junction and of the northern side of the fort discloses the interesting fact that the Boundary Ditch runs on, curving round the nose of the hill to die out on the northeast, and that the Camp was deliberately placed in this curve—the earlier bank and ditch forming in fact its original northern boundary.

A well-known instance of a hillfort later in date than a 'boundary ditch' is the camp on Quarley Hill, Hants, where at two points the ramparts cut through a wandering bank and ditch of similar type to the Ladle Hill example.*

2. THE SETTING-OUT DITCH. The northern part of the area to be occupied by the Camp was, as we have seen, marked by the course of a pre-existing earthwork consisting of a small ditch with a bank exterior to the proposed fort. It is natural to expect that the remaining circuit of the area should be marked out in some way to guide the diggers of the main ditch, and it so happens that the designers chose to mark out this line by means both easy for them and conveniently permanent for us. The method employed was to dig a small ditch of profile similar to the Boundary Ditch with a correspondingly slight interior

* *Air Survey and Archaeology*, 2nd edition, pl. x, pp. 4 and 32.

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bank ; starting from the end of the Boundary Ditch on the east and curving round to join it again further down on the west. This slight earthwork has been called the Setting-out Ditch,* and can be traced across every causeway between the fully excavated parts of the main camp ditch except at two points, one on the east and one on the west, where gaps have been left, presumably to mark the positions of the entrances of the fort.

At one point on the northeast the Setting-out Ditch and the Boundary Ditch overlap, and both are visible across a causeway.

The slight inner bank of the Setting-out Ditch is almost everywhere covered by the beginnings of the true rampart of the Camp, but it shows particularly well across one wide causeway, 80 feet across, on the northeast, where no ditch or rampart has been made. The material of the bank of the Setting-out Ditch would consist of little more than turves and top soil, with a little small chalk rubble, and it is possible that the layer of similar material so often found on the old ground level when sections are cut through the ramparts of hillforts on the chalk may not represent, as has been usually assumed, the first material dug from the great ditch, but the bank of a setting-out ditch which was completed before the digging of the actual camp ditch.

3. THE DIGGING OF THE MAIN DITCH. With the site marked out for the whole of the circuit of the proposed defences, work could now begin in earnest by digging the great ditch, which was, in addition to being a defensive feature itself, the quarry for the material of the even more important rampart behind it. The digging was clearly done in gangs of varying sizes, each gang digging out a separate section and leaving causeways between itself and adjoining gangs to allow for the excavated material to be carried into the area of the Camp and to provide general easy access. Across these causeways, the Boundary Ditch or the Setting-out Ditch can be traced, but where the digging of the great ditch has begun they have of course been dug away.

The excavated sections vary in length from 25 feet to 170 feet, and are all about 20 feet wide ; but they are irregular and often have 'partial causeways' as well as the true gaps. A large sector of the Camp on the west, north of the west entrance, has a run of continuous ditch with only a single partial causeway for a distance of some 530 feet.

This gang work, and the consequent interruptions of both the

*This explanation of the ditch was first suggested by Dr Cecil Curwen, F.S.A.

PLATE I



LADLE HILL CAMP AND ITS ENVIRONS
Copyright secured

LADLE HILL

ditch and the rampart quarried therefrom explains the irregularities which form such a striking and puzzling feature of the Camp at first sight.

4 and 5. THE DISPOSAL OF THE EXCAVATED MATERIAL AND THE BUILDING OF THE RAMPART. It was found that the making of the rampart of the Camp was not just a simple matter of throwing up the

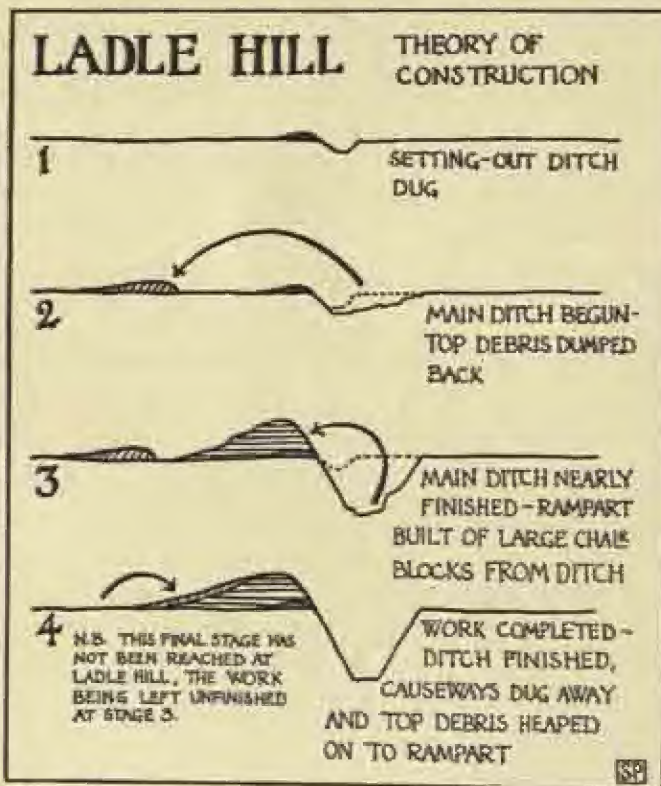


FIG. 3

excavated material on the inside of the ditch. A more elaborate method was pursued, the clue to which is in some measure given on the north sector of the Camp, where the old Boundary Ditch was adapted to suit the purpose of the builders of the Camp.

By itself, this ditch was useless for defence: it was too small, it had its bank on the wrong (downhill) side, and it is probable that when the construction of the fort was begun the ditch was silted up to some

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extent. It was necessary therefore to clear out the silting and re-dig and enlarge the ditch. The remainder of the circuit of the proposed ramparts was marked by a similarly slight and ineffective Setting-out Ditch. Fig. 3 shows the sequence of construction on this part—it would be exactly similar on the course of the Boundary Ditch except that the original bank of this latter was left outside the new ditch as a counterscarp bank.

Now one of the most interesting features in the constructional history of the fort comes to light. It seems that the builders were unwilling to make the base of the rampart with the turf, mould and shaly surface-chalk that would constitute the first material moved in making the ditch. They wanted, in fact, not a rampart consisting of loosely thrown rubble from the ditch, but a firm mass, the lower and outer courses at least being deliberately and carefully *built* with the large chalk blocks extracted as the digging got deeper. Careful construction of this kind is to be expected: even if part of the rampart did ultimately find its way back into the ditch a retaining wall and firmly consolidated base would delay this and make a more formidable barrier. The use of stones from the ditch as a retaining wall for the bank has recently been suggested in connexion with the Southern Cross Bank at Hembury Fort, Devon.*

With this end in view, the builders of Ladle Hill Camp seem to have dumped back, at a distance of some 30–40 feet from the inner lip of the ditch, all the small chalk, earth and so forth that formed the first debris from the excavations, thus leaving a berm on which to build the rampart. This 'small' debris was tipped in a series of low irregular heaps (The Top Soil Dumps), with the apparent intention of piling them on to the solid based rampart to level up inequalities when the ditch was completed, as in stage 4, fig. 3. This stage was never reached at Ladle Hill, stage 3 representing the state of the Camp when work was abandoned.

Many of the dumps, as can be seen from the plan and air-photograph, are of 'tadpole' shape, with the 'tails' pointing away from the ditch; suggesting successive loads tipped from the inside of the Camp and showing that, while some sort of a limit was fixed on their interval from the ditch, they were allowed to straggle inwards without check.

As will be seen from the plan, these inner Top Soil Dumps occur

* *Report on Excavations at Hembury Fort, Devon, 1930*, by Miss D. M. Liddell, p. 11.

PLATE II



LADLE HILL. INTERSECTIONS OF BOUNDARY DITCH WITH LYNCHETS AND SUNK TRACKS
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PLATE V



LADLE HILL CAMP: SECTION SHOWING MAKE-UP OF RAMPART ON SOUTH
PK. Stuart Piggoft

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all round the Camp, and in most places it is impossible to tell whether they are anterior or subsequent to the piling up of the main rampart. But the north sector of the Camp, where it is founded on the Boundary Ditch, gives the clue to the relative sequence. Here, for a distance of some 55 feet there is no rampart; only the Top Soil Dumps, with a wide berm between them and the ditch. The excavations made to clear out and enlarge the Boundary Ditch opposite them are smaller and shallower than elsewhere in the Camp. The evidence clearly shows that the inner Top Soil Dumps were made before the main body of the rampart.

On the ground it looks as if the process of heaping the loose material back on to the rampart might have been just started near the southwest end of the Camp, as the ends of the dumps nearest the rampart look slightly 'nibbled', but it is a point one would not like to press.

The contrast is clear between the shallow scrapings in the old boundary ditch where no rampart has been started—the deepenings being as shallow as two or three feet (plate iv)—and the deep ditch and massive rampart on the southern and eastern sides, where the work is more advanced. A section measured across the ditch and rampart north of the east entrance shows the ditch to be five feet below the ground outside and twelve feet below the rampart crest. On the south side of the Camp confirmatory evidence of the theory of construction described above is provided by a digging which cuts into the end of one of the segments of true rampart. The lower part is thus exposed in section and can clearly be seen to consist of large chalk blocks quarried from the lower levels of the ditch. (Plate v).

SUMMARY. This then is the sequence of construction suggested by the earthworks of Ladle Hill Camp. The site chosen by reason of natural suitability, and the choice further controlled to some extent by the older Boundary Ditch; the circuit of the intended ditch and rampart marked partly by this, partly by a Setting-out Ditch, with gaps left for entrances at east and west; the great ditch begun by digging it out in segments by gangs of workmen; the top soil dumped back for later use; and finally the beginning of the building of the rampart with the large chalk blocks quarried from the ditch. At this point the work was abandoned for reasons unknown to us and the half-finished fort left to puzzle posterity.

It may be as well to mention two features on which no evidence is forthcoming at Ladle Hill. One is the use of timber-work, in the

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form of palisading or revetting. Nothing has been found to indicate either the presence or absence of this, but indeed would hardly be expected without excavation. The second is the nature of the entrances. Here the work must have been abandoned at an early stage, as the two gaps in the Setting-out Ditch and the true rampart are quite featureless and show no signs of incurving or of guard-houses or the like.

THE DATE OF THE CAMP. As has been mentioned above, there is no direct evidence of the date of the Camp. Some idea may however be gleaned from its relation to the other earthworks on the hill. The Camp is later than the Boundary Ditch, which is itself later than the lynchets on Great Litchfield Down, through which it cuts. These lynchets may themselves be of any age to the Roman period, but also on the hill are two roughly square earthwork enclosures (see fig. 1). The westerly, about 35 by 25 yards with an entrance on the east side, has a bank and ditch of slight profile—the crest of the bank being about 2 feet 6 inches above the bottom of the ditch, with an overall measurement of 20 feet. There is a very slight counterscarp bank. The other enclosure, further to the east, measures about 30 by 40 yards and has a similar overall measurement but rather slighter profile, with no trace of a counterscarp bank. There is an entrance on the south side. These enclosures are of a type frequently intimately associated with lynchet-groups in Wessex and seem to be of Hallstatt-La Tène I culture (Hawkes' Iron Age A). The Great Litchfield Down examples and the lynchets may be of this date. In that event the Camp would be later than La Tène I, and it is tempting to suggest that it may be a product of a 'scare' which seems to have caused a widespread rebuilding of old camps and fortification of open settlements some time in La Tène II. The pit dwellings on the nose of Ladle Hill may represent an open settlement to be replaced by the Camp when built and in which the builders no doubt lived while work was in progress. In its sudden cessation we may perhaps have an echo of the same cause that led to the abandonment of the hillfort on the Trundle, Sussex, late in La Tène II, when a reconstruction of the gateways, planned on a grandiose scale, was begun but left unfinished and unused.

THE EARLY NAME OF THE CAMP AND THE OLD POND

The present name of Ladle Hill is not original: it occurs on Isaac Taylor's map of Hampshire of 1759 and is probably earlier than this, but the Early English name of the Camp is preserved in the bounds

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of two tenth-century charters of grants of land in 'Clere', and is of great interest.

In the bounds appended to a charter of A.D. 943 of lands in Clere[†] we find the Camp referred to as a landmark. The boundary runs south, and comes to the foot of the down. Thenceforward the bounds run as follows: *Thæt be eastern thone holancumb up on dune; thaet swa on tha byrgelsas; thaet swa to meres byrig westan on tha dic*,—that is to say, on the east side of the Hollow Coombe on to the down, then so to the Burial Places; then so to the Camp of the Pond westward to the Ditch. The 'Burial Places' are clearly barrows 2 and 3 (fig. 1); the 'Camp of the Pond' must be the Ladle Hill Camp, and the 'Ditch' the Boundary Ditch running thence. The bounds then continue *andlang dic*—along this ditch to the south. The modern parish boundary follows the same line.

Another charter of Clere of reputed date A.D. 931,^{*} remarkable for its detailed bounds, mentions *herepathe the scyt to meres byrig*—the highway leading to the Camp of the Pond.

This name (which if it had survived would have given 'Meresbury' or some such form) is most interesting, as close to the Camp there is today a large dewpond of some age. Mr Crawford, discussing the old name of the Camp,^{*} suggested that this dewpond is the pond of the Saxon charters, or at any rate occupies the same site. Were this the case it would be an instance of a dewpond of undoubted prehistoric or early historic date, and as such of very great interest in relation to the vexed question of the antiquity of these ponds.

There is however at the foot of Ladle Hill on the west an earthwork, marked 'Old Pond' on fig. 1, which is clearly an ancient catchment pond. In its present condition it consists of a semicircular embanked area, about 40 by 15 yards, against the edge of a trackway which runs diagonally up the hill southwards, and which now cuts below the level of the silted-up interior of the pond. There is today only a drop of some 3 feet into the area of the pond, while outside the bank slopes steeply and is some 13 feet high above the natural slope, which is here

[†] B.C.S. 787; K.C.D. 1145. These bounds have been studied by Crawford (*Andover District*, pp. 77-8) and Grundy in *Arch. Journ.* 1921, LXXVIII, 130-134.

^{*} B.C.S. 674; K.C.D. 1102. Crawford *op. cit.*, 78-9; Grundy in *Arch. Journ.* 1924, LXXXI, 94-103.

^{*} *Andover District* (Oxford, 1922), p. 77. Photographs, showing the pond completely dry in 1911, are printed opposite p. 78.

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very steep. The pond seems to resemble that at Park Brow, Cissbury, which was constructed at the side of a track to collect surface water from it.

It must be recognized then that the dewpond has a rival claimant to the origin of the Saxon name of the Camp, and while like all dewponds that on Ladle Hill has no details distinctive of any one period of antiquity, the catchment pond by the trackway has features that strongly suggest an Early Iron Age date. One would like to claim a proven antiquity for the very attractive dewpond on the summit of the hill, but this disused pond at the foot makes it necessary to return an open verdict.

OTHER ANTIQUITIES SHOWN ON FIG. I

Although not strictly bearing on the subject of this paper, a few notes on the remaining antiquities shown on the general plan may conveniently be inserted here.

THE SUNK TRACKS. Sunk tracks, hollowed or terraced by constant traffic on the hill-slope, run up the hill at several points. Above the Seven Barrows two tracks cross where they cut through the Boundary Ditch and are clearly later in date. They are well shown on the air-photograph, plate II. Another track has been mentioned in connexion with the old pond at the foot of Ladle Hill. While in its original state the track was probably contemporary with the pond, subsequent traffic has cut it below the level of the silting which accumulated when the pond became disused.

More than one track climbs the nose of Ladle Hill on the north, and that which curves round and ends nearest to the Camp may be contemporary with it. It is a fine terraced way rising in an even gradient.

PIT DWELLINGS. On the nose of the hill to the northwest of the Camp is a group of depressions marking hut-sites, presumably of an open settlement preceding or contemporary with the building of the Camp. They have no features by which they can be dated without excavation but are most probably Early Iron Age.

THE EASTERN DITCH. East of the Camp is a second boundary ditch of slighter profile, which runs for some 1200 yards towards Hare Warren Down, where it dies out. Its northern end is on the edge of the steep slope of the down.

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THE BARROWS. There are five round barrows on the area covered by the general plan, excluding the three of the well-known Litchfield Seven Barrows. Details of these five are as follows :—

1. A fine disc-barrow, 170 feet in diameter, with a single central tump which has been dug into. Two other slight diggings have been made in the berm.
2. Disc-barrow within the area of the Camp, 40 feet in diameter and of slight relief. The central tump has been dug into.
3. Large bell-barrow, dug into from the top. Now about 5 feet high and 100 feet diameter.
4. Saucer-barrow, close to the last and almost touching. It consists of a ditch and exterior bank, 80 feet in diameter, with a low mound, about 2 feet high, filling the whole of the inner area.
5. Low bowl-barrow, 48 feet in diameter, with no visible ditch. About 2 feet high, and much infested with rabbits.

[Thanks are again due to the Royal Air Force whose cooperation during practice flights enabled these photographs to be taken. Without them a most fascinating problem would have remained unsolved.—ED.]

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A MEDIEVAL COLLECTOR?

Mr C. W. PHILLIPS writes :—

We are told that antiquarianism is a sign of a stationary or decaying civilization. However this may be, it has itself a very respectable antiquity which is attested by the occasional discovery of signs of the enthusiasm in Ancient Mesopotamia, to say nothing of the Roman Empire. Even Medieval England seems to have had its collectors, and a stray glimmer of light is thrown upon this matter, and on the sinister methods of one such, by a curious entry in the Hundred Rolls under the date 1270. When the Commissioners examined the recent affairs of Lincolnshire and heard complaints of oppression and usurpation of the Royal rights they encountered a case which, though unimportant, must be difficult to parallel at such an early date in England.

The translation of the entry runs¹ :—

Further, it is alleged that Robert de Stretton, deceased, aforetime Preceptor of Temple Bruer, unjustly took from Adam Lewyn of Rauceby half a mark of silver, with which sum he bought a gold denarius from Catherine de Rowston, found by the said Catherine, and it is not known by what warrant he did this.

By 1270 the Crusades had all but collapsed and the Knights Templars were rapidly getting the evil reputation for greed and extortion which afforded a handle to their suppressors, Edward I of England and Philip the Fair of France, some four decades later.

As Preceptor of Temple Bruer the offending Robert was the most powerful Templar in Lincolnshire, if not in all England, and he is likely to have had foreign experience in the Near East in the course of which he may have acquired antiquarian tastes.

The district round his Preceptory was a wild heath right down to the end of the 18th century and its passage was so difficult owing to its flat and featureless character that it suffered the indignity of the

¹ *Rotuli Hundredorum*, i, 280.

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erection of a land lighthouse, which still stands as Dunston Pillar by the Lincoln-Sleaford road, though its former purpose is changed and it now supports an effigy of George III.

The Ermine Street runs northwards from Ancaster to Lincoln right through the whole length of the Heath and passes close to Temple Bruer and the two villages of North and South Rauceby.

Rowston, the home of the finder of the coin, lies six miles east of the Street, rather more than half-way between it and the Car Dyke, and close to Ashby de la Launde where remains of a Roman building were found in 1831.² It is improbable that a gold coin found in this district before 1270 would be any other than Roman.

Dr G. C. Brooke of the Department of Coins and Medals in the British Museum has kindly informed me that the only medieval gold coin minted in England before 1270 was the gold penny of Henry III which appeared in 1257, but went out of currency soon because of its unsound ratio to the silver of the day.

He says :—' The use of the term " gold denarius " in the charge suggests that this is the coin referred to. The Roman gold coin would more naturally be called solidus. On the other hand it seems incredible that anyone should ever have been fool enough to steal half a mark of silver (6s 8d.) in order to buy a coin which was then current at two shillings. Perhaps the currency of the gold denarius led to the word " denarius " being used loosely for the Roman coin ; if it was a solidus of 120 grains its metal value would have been 5s 4d. and its antiquarian value was therefore assessed at about a quarter as much again, which seems not unreasonable '.

COLCHESTER

Mr CHRISTOPHER HAWKES writes :—

The Colchester Excavation Committee's second season this year lasted from 24 August to 3 October. Last year and this spring it had been established that a pre-Roman native settlement of great size and importance stretched all along the foot of the low hill which rises southward of the river Colne on the west of the modern town. Casual finds had previously been made on the hill itself, and it was expected that this would prove on excavation to have been the effective centre

² Edward Trollope, *Sleaford and the Wapentakes of Fluxwell and Aswardhurn* ; London and Sleaford, 1871, p. 41.

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of native habitation. This may yet be found true of its summit, but it has now been revealed that a large part of its northern slope was untouched by British settlement, and was chosen as a camping-ground by the Roman Expeditionary Force on the fall of the native capital A.D. 43. The great defensive ditch of the camp, some 35 ft. wide and 11 ft. deep, was excavated along a substantial portion of its eastern stretch, and proved to have been deliberately filled in, in two stages, within a short time of its original excavation. Inside the line of the rampart corresponding to it lay a wide belt covered with hearths, middens, and deep rubbish pits, foreshadowing the cooking areas backing on to the ramparts of later legionary fortresses. Inside this again were timber-framed wattle-and-daub barracks, the prototypes of the familiar elongated L-shaped buildings of later forts, of a size each to hold one century, with the centurion's quarters at the end. These buildings are represented by the post-holes that held their uprights, and by the narrow slots dug in the natural sand as bedding for the foot of their wattle-and-daub walls. Flanking the most fully excavated building was a metalled road with a ditch or kennel along it.

The alignment of buildings and road runs obliquely to the defensive ditch, and the camp cannot have been rectangular. The full extent is a matter of conjecture, but the season closed with the location of its western gate, a complicated structure which will be fully excavated next year. The internal buildings seem to have continued in use after the levelling of the defences, and no doubt served as a base for the building of Roman Colchester in and after A.D. 50. Huts also appear over the filling of the ditch, and also over that of a smaller ditch running outside (*i.e.*, west of) it, which is very possibly that of the original 'marching' camp of the army that must have preceded its semi-permanent winter-quarters. Outside the main western gate, remains of a timber defensive system appear, which are either outworks belonging to it, of most peculiar type, or else belong to native fortifications which may be awaiting excavation on the adjoining ground higher up the hill. At any rate, the sequence here of native city, Roman camps, and Roman colony, side by side and each apparently distinct, is affording a chain of evidence for the story of 'Romanization' hitherto without parallel, and pottery, coins, brooches, etc., have been obtained in very large quantities. We understand that full publication of the material already obtained in all parts of the native site is to be undertaken within measurable time, and that a series of detailed reports will thus be inaugurated. Meanwhile it is good to know that no part of the site

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is now threatened with immediate road-building, and that the Excavation Committee is likely to have secured a reasonably long start over the pioneers of future 'development'.

Mr HAWKES was in charge of operations, assisted by Mr R. W. HUTCHINSON, F.S.A. Major BUSHE-FOX acted as consultative director. There was a volunteer party of workers, and paid workmen up to a maximum of 39 were employed. Some financial assistance was given by the Corporation of Colchester, and co-operation was maintained with the Colchester and Essex Museum (Mr M. R. HULL and staff).

SALMONSBURY CAMP, GLOUCESTERSHIRE

Mr G. C. DUNNING, Director of Excavations, reports:—

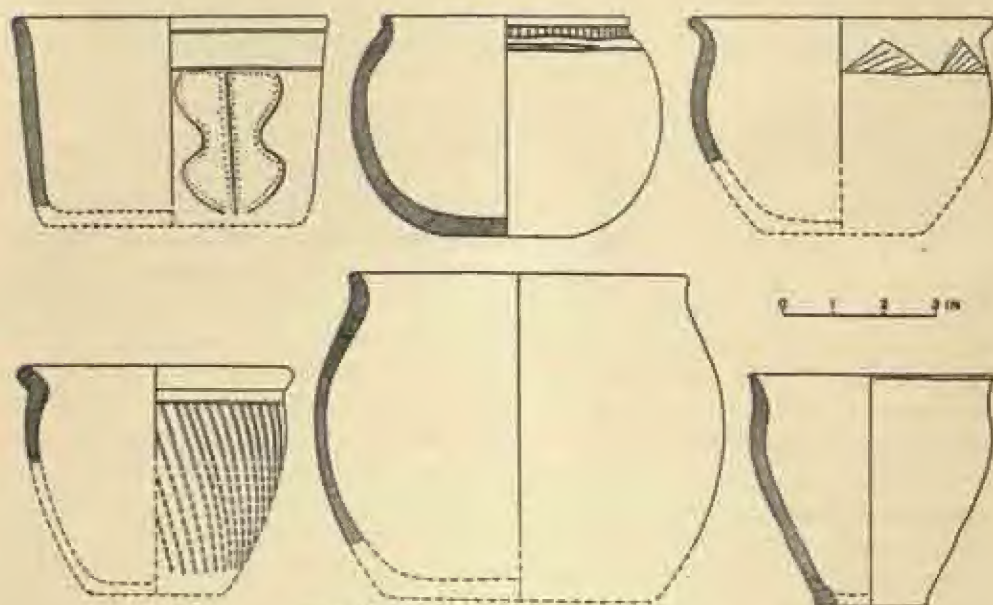
During July and August 1931 the Anthropological Society of University College, London carried out preliminary excavations in the fortified settlement of Salmonsbury, $\frac{1}{4}$ mile east of Bourton-on-the-Water. The work was made possible largely by the generosity of Mr A. S. Owen, of Keble College, Oxford, and subscriptions to a local fund. Great help was given by members of a local committee and by the owners of the land, to all of whom sincere thanks are due for their valuable cooperation.

The camp is on a large patch of gravel at about 450 ft. O.D. in the angle between the rivers Dikler and Windrush, and originally seems to have been bounded on two sides at least by a swamp or lake. The camp is nearly square and covers about 56 acres. On the east side, two curved banks prolong the line of the ramparts for about 500 feet; these may be in the nature of causeways running out into the marsh between the camp and the river Dikler.

A section, 240 feet long and 12 feet wide, was cut through the defences on the east side. The rampart is here 60 feet wide and $2\frac{1}{2}$ feet high, built of loose gravel thrown out of the main ditch, which is 34 feet wide and 12 feet deep. The outer bank is about 40 feet wide and has been much ploughed down; beyond this is an outer ditch, 19 feet wide and 9 feet deep. The ditches are v-shaped, and steeply cut in the gravel. The old turf line was found underneath both banks, and under it were unexpectedly found a number of pits about 6 feet in diameter, filled with a stiff red clay (plate 1). A few sherds of Hallstatt pottery, some with finger-nail marks, were found on the old turf line, and flint flakes only in the pits. A few slabs of

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oolite occurred near the crest of the main rampart, and a considerable quantity of similar stones was found in the lower filling of the big ditch; these seem to be the remains of a dry-built retaining wall, such as is still visible elsewhere in the rampart. Evidence of ploughing in Roman times was found in the ditch, and it seems probable that the rampart was lowered and the stone wall thrown down into the ditch during this period.

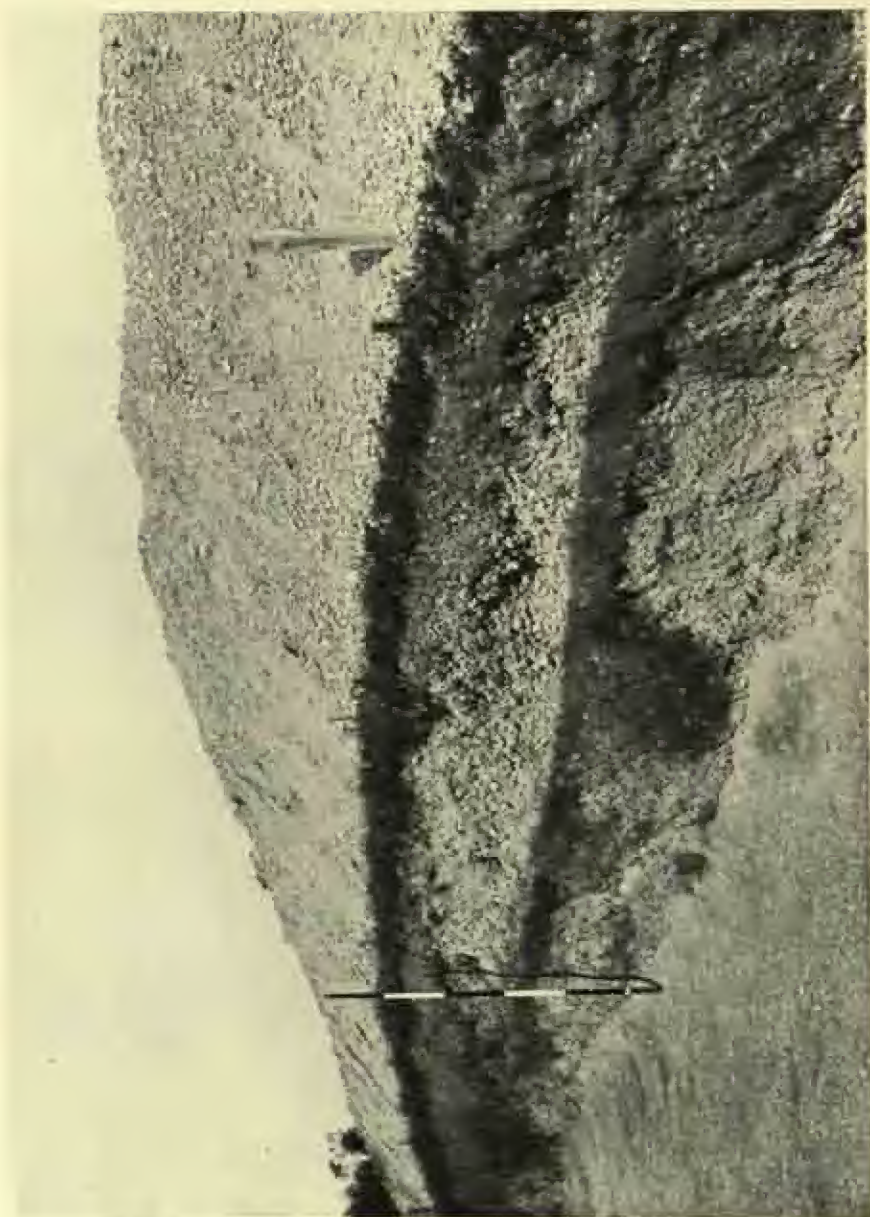


POTTERY FROM SALMONSBURY CAMP (4)

A circular hut-site was found inside the camp, close against the inner slope of the rampart. The hut, 22 feet in diameter, consisted of a ring of eighteen post-holes, on an average 3 feet 9 inches apart, and three central holes for poles supporting the roof. The entrance, 8 feet wide, was to the southeast. (Plate II).

Most of the post-holes were vertical and comparatively shallow, and probably held uprights about 6 feet high, supporting a conical roof of reeds or rushes. There was no inside fireplace, but two built-up stone hearths were found 12 feet south of the hut. On two sides of the hut was a drainage ditch, 2 feet wide and 1 foot deep, which passed beyond the excavation to the south, and probably served to

PLATE I



SALMONSBURY CAMP, GLOUCESTERSHIRE : SECTION OF RAMPART

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parallel with that from Uffington Castle. On removing a section of the rampart down to the undisturbed chalk two parallel rows of post-holes were discovered, about 7 feet apart, each hole also averaging 7 feet from its neighbour. The holes were about a foot in diameter and had been sunk about $2\frac{1}{2}$ feet below the original turf-line. In two cases it was possible to determine the actual diameter of the posts that originally occupied the holes, *viz.*, about 6 inches. The posts must have projected above the rampart and have formed the basis of a double fence of some sort. Quite clearly they did not form part of any scheme for revetting the material of which the rampart was made. The date provisionally assigned for this work is about 300 B.C.

'When filling in the excavations, the position of this double stockade was marked by setting up in the original holes lengths of old telephone poles of approximately the correct diameter, projecting about 6 feet out of the ground. This gives the visitor a very good idea of the nature and position of at any rate the skeleton of the original timber defences. The accompanying photographs show the post-holes visible after the removal of a section of the rampart, and also the reconstructed palisade as it now appears after restoring the same section of the rampart. The same arrangement was found in another cutting adjoining the eastern entrance where the holes in which the gate-posts stood were also discovered. The full report is expected to appear in *The Antiquaries Journal* early in 1932'.

The photographs were taken from the top of a tripod consisting of a 15-foot ladder lashed to two 11-foot poles—a very useful contrivance for photographing excavations and earthworks. The increased height enables one to look down upon the subject and get a greater breadth of view.—EDITOR.

NOREIA

Excavations at Noreia in Styria have resulted in the discovery of thirty dwellings belonging to the prehistoric capital of Noricum: a few of these date from the Early Iron Age (Este III), but the majority from the Late La Tène period. The fortifications of the city, 194 metres in length, have also been investigated; they consist of a stone wall and a wooden palisade 49.8 metres long. The city gate (4.2 metres in breadth) was flanked by two semi-circular towers, and there were four towers along the palisade; opposite the middle tower were

PLATE III



HOLLINGBURY CAMP, SUSSEX

Post-holes of a double palisade found under the rampart

PA. E. C. Curwen

PLATE IV



HOLLINGBURY CAMP, SUSSEX
Section of reconstructed palisade
Photo. E. C. Curwen

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two Roman siege-towers (1.85 and 2.2 metres in breadth), in one of which Roman potsherds were discovered. Noreia was conquered by P. Silius in 16 B.C.

Traces of camp fires and fragments of vessels have established the site of the camp of the Cimbri at Noreia in 113 B.C.

FLUORESCENCE USED FOR ARCHAEOLOGICAL PURPOSES

Dr FRANZ of the Prague Museum writes :—

'Mr L. V. DODDS (*ANTIQUITY* 1931, p. 235), has a note on the uses of fluorescence for historical purposes; I may point out that a similar method of analysis may serve prehistoric research also. The Dutch scholar, van Ledden Hulsebosch, established by the aid of ultra-violet rays that the bones found in a Dutch megalithic tomb came not from burned bodies but from buried ones (*Archiv für Kriminalogie*, 78, 1926). Similarly K. Hörmann of Nürnberg pointed out the practice of drying corpses in prehistoric times in Bavaria (*Schumacher-Festschrift*, Mainz 1930, p. 77). I myself claim to have established by the same means the authenticity of the so-called second Venus of Wisternitz, a statuette of a woman of the diluvial period from Moravia.

'There is no doubt that ultra-violet rays afford us a new aid to research. Its value for our purposes is no doubt limited, since fluorescence does not result in the case of all bodies or all materials, and it is only under quite definite conditions that it is of use to the archaeologist. I hope shortly to publish a pamphlet on the subject, for I have made many experiments. The most useful work for consultation is *Die Lumineszenz-Analyse*, by P. W. Dankwortt (Leipzig, 1929), and the article by H. Rinnebach in *Museumskunde* N.F. III, 1931, p. 5, is also helpful'.

EARLY FORMS OF TRANSPORT

Dr CYRIL FOX writes :—

'Readers of *ANTIQUITY* interested in early forms of transport may like to know that in Dr A. C. Haddon's *Study of Man*, 1898, there are two chapters on the evolution of the cart which deal in detail with the invention of solid and spoke wheels, and with the genesis and development of the slide-car. These are fully illustrated'.

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ROMAN VILLA IN CORNWALL

Mr B. H. St. J. O'NEIL sends us the following report:—

Whilst ploughing the field opposite his house in the spring of this year Mr B. Mitchell, owner of Magor Farm near Camborne, Cornwall, found what proved upon examination to be a tessellated pavement of Roman type.

The importance of this find as representing the first recorded Roman structure in Cornwall was at once realized, and under the auspices of the Royal Institution of Cornwall with the co-operation of the Federation of Old Cornwall Societies an Excavation Committee was formed to arrange for a scientific examination of the site after harvest.

Excavation occupied four weeks in September and disclosed a small Roman villa of the common winged-corridor type, measuring in its final state 106 feet from side to side and 55 feet from back to front of the wings, which project 16 feet.

The villa was found to have suffered from the plough and deliberate robbing, probably late in the 18th century, especially in the north wing of which only a few fragments remain, sufficient to indicate that it would no doubt compare in plan and history with the south wing.

The tessellated floor formed the verandah of the villa, facing westwards down the valley of the Red river. The tesserae are of buff-coloured quartz porphyry, locally called elvan, from a short distance away. They vary greatly in size but average 1 inch square and are laid carefully in strips on concrete and fixed with cement. There is no attempt at producing a pattern.

The walls of this part of the house and of the south wing, as originally planned, are of local slate. In one of the rooms during this period two successive floors can be identified, the later one being of the type usual in the house, rammed plaster on quartz blocks with or without a cement crust in all 6 inches thick. At a still later period two gaps were made in the outside wall and three rooms added with granite walls and in one case a fine brick-dust concrete floor, 4 to 6 inches thick.

All the walls were plastered and decorated with a variety of colours and patterns, including a leaf and tulip design, many of them decidedly more artistic according to modern ideas than those frequently met with on Romano-British sites. From various indications it is probable that the masonry was not as a rule carried to any great height, although

PLATE V



ROMAN VILLA NEAR CAMBORNE, CORNWALL.
General view from back showing main block and (on left) the south wing.
P.L. Meares-Gibson, Poole.



ROMAN VILLA NEAR CAMFORNE, CO. WICK.
The headland pavement looking down the foot of the North Wall.
P.W. Meeks Gibson, Wick.

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in certain places support other than of wood must have been necessary for the extremely heavy slate roof, much of which was found lying among the debris on the floors.

No 'Samian' ware or mortaria were found and pottery of any kind was scarce. All the datable fragments, whether Roman or native imitations, with a few exceptions of slightly later date, are of the usual types of the latter half of the 2nd century A.D. and the one brooch is of the same period. In the absence of definite evidence these may be taken to indicate approximately the flourishing time of the house, although the probability of the persistence of these particular types, especially in a remote corner of the province, must not be overlooked.

Exactly when the addition was made is uncertain but that the owner was still in residence in 235 is shown by the discovery in a recess in the wall of an inner room of the remains of a hoard of denarii, 13 in all, the latest being of Severus Alexander. The six other coins from the excavation are Antoniniani, ranging from 260-273, and were found in the debris of the fallen roof or amongst the ashes of fires lighted in one of the rooms of the south wing, perhaps by squatters after the departure of the rightful owner. Nothing of later date was found and there was no indication of any connexion with mining.

It is, therefore, suggested that this villa was not the residence of a Roman, retired or in service, but of a native. Most of the natives were in all probability still living in huts similar to those cleared at Chysauster near Penzance. This villa may, however, have been built by a native who as a young man left the district to go eastwards, perhaps into imperial service, and returned home upon his retirement. He was accustomed to seeing and living in houses of Roman type and enjoying the usual comforts of Roman life. He still wanted these and, perhaps, also desired to impress his neighbours. Therefore he built himself a house in the familiar style making the best of local materials, importing some luxuries but going without others, such as baths, more difficult to construct or to obtain. Later, in the 3rd century, the house was probably abandoned through fear of Irish raiders whose influence was beginning to be felt. It does not, however, appear to have been destroyed by fire but to have fallen gradually into decay.

Recent Events

The Editor is not always able to verify information taken from the daily press and other sources and cannot therefore assume responsibility for it.

Professor Sir Flinders Petrie, in a private letter to the Editor, makes the interesting suggestion that the Pompeian pottery should be scientifically studied and drawn. It would thus serve as a basis for dating classical pottery all over the ancient world. We do not want any more editions de luxe—we want corpuses of the *common* forms.



In the same letter the Professor draws attention to his own experiments—of course with *nil* results—with the growing of mummy wheat, fully described in *Ancient Egypt*, 1914, p. 78.



A correspondent writes:—‘The throwing axes from Germany depicted on p. 329 of this month’s *ANTIQUITY* (Sept. 1931) bear a curious resemblance to the throwing-stick still in use in Bornu (Nigeria) . . . I do not suggest any cultural affinity. That a spikey object should make a good missile must have occurred to most people’. The sketch added makes clear the very close resemblance.



It is reported that a large ‘town’ has been discovered on the veldt near Heilbron, Orange Free State, by Dr P. W. Laidler. The published account however is so obviously deficient that we can only conclude that *a* site, apparently of some importance, has been discovered. Further information would be welcome. (*Daily Telegraph*, 5 October 1931).



Dr Frankfort, on behalf of the Oriental Institute of the University of Chicago, is engaged on the excavation of two early sites near Baghdad. Those who know Dr Frankfort’s published work on early painted pottery will expect great results. What a fine thing it would be if the Oriental Institute could excavate a site in Turkestan (like Anau), the region where so much seems to have originated!

NOTES AND NEWS

Some paintings have been found under a rock-shelter near Laguna Blanca, Magallanes, Chile. We hope to be able to illustrate them in a later issue.



The Devon Archaeological Exploration Society has been excavating in Smythen Street, Exeter, with the object of discovering more about the city in Roman times. At the depth of 4 ft. the floor of a hypocaust was found, walled with tufa ashlar set with hard mortar. This chamber was filled with rubbish containing fragments of massive red roof-tiles of the usual flanged pattern, a large quantity of fragmentary decorated flue-tiles, and numerous rims and sherds of black-ware cooking-pots and other vessels with crude decorative markings. One fragment of red-glaze has the name of the Graufesenque potter Severus. The most interesting finds were three Greek copper coins, one of Velia in Lucania, not later than 250 B.C., but the building is probably of the second century A.D., and on the evidence of three coins of Valentinianus I., all of the Arles mint, presumably was inhabited up to the end of the Roman occupation.



The prehistoric site at Chysauster farm, near Penzance, has been placed in the charge of the Office of Works and is being systematically excavated. An account of the site and the investigations made since its discovery was printed in the *West Briton* (Truro) of 6 August. Some particulars of it will be given in the forthcoming volume on Cornwall in Methuen's County Archaeological Series.



A good example of a Bronze Age beaker, found at Burton's Green, Essex, and now in the Colchester Museum, was illustrated in the *East Anglian Daily Times*, 7 August.



The age of certain gravels in the New Forest area are discussed in a letter contributed to *Nature* (8 August) by Mr M. C. Burkitt as the result of an examination which he and Mr J. Preston have made of exposures to the east of the Hampshire Avon and particularly in a pit near Hordle.

ANTIQUITY

A fragment of a Roman inscribed stone from Caistor near Norwich, the first to be found in Norfolk, is reported in the *Eastern Daily Press* (Norwich), 8 August.

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Photographs published in *The Times* of 10 August show the admirable manner in which medieval European stonework—mainly fragments of buildings—is now exhibited in the Philadelphia Museum of Art. Students who have not the opportunity of seeing examples of such architecture *in situ* are thus able to study actual details of the craftsmanship of the time.

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Excavations which have been in progress at Thermi in Lesbos under the direction of Miss Winifred Lamb, acting for the British School of Archaeology at Athens, are almost completed. The five superposed settlements of the site have been mapped. (*The Times*, 11 August).

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The second century theatre already known in the Temple area at Trier has now been proved to be above one of a century earlier, which itself was built over one of Augustan date. (*The Times*, 15 August, p. 7).

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A proposal is on foot to excavate and display as far as possible the Roman remains in Capri, the Government having granted funds to Professor Maiuri, Superintendent of Excavations, for the purpose. (*The Times*, 19 August). Work began last October on the Villa Jovis, one of the many palaces of the Emperor Tiberius.

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Miss D. A. E. Garrod has published a report on her excavations in Palestine for the British School of Archaeology. (*Bull. American School of Prehistoric Research*, April 1931, no. 7, pp. 5-11).

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A British camp has been excavated in Llanmelin Wood, Caerwent. The main camp is elliptical in form, being 750 feet by 400 feet, enclosing an area of $5\frac{1}{2}$ acres, with an oblong annexe of $2\frac{1}{2}$ acres. (*The Times*, 27 August).

NOTES AND NEWS

The work of the Cambridge Expedition to the East African Lakes is reported upon by Dr E. B. Worthington in *The Times* of 27 August.

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Excavations on the site of the Roman fort at Brough Hill, Bainbridge, Yorkshire, which were carried on in 1926-29, were resumed in August with the particular object of uncovering the whole of the vicus wall. (*Darlington Times*, 29 August).

◇ ◇ ◇

An interesting note was published in the *Morning Post*, 31 August, on the forgeries—some 2000 metal objects—made by two illiterate but ingenious mud-rakers in 1858 while the Shadwell Docks were under construction.

◇ ◇ ◇

Arrangements have been made by the Dorset Natural History and Archaeological Society for the site of the Roman temple on Jordan Hill, Preston, Dorset, to be completely excavated under the direction of Lieut.-Col. C. D. Drew and Mr Charles Prideaux. (*Dorset County Chronicle*, 3 September). The work was begun last autumn.

◇ ◇ ◇

The principal results of this season's work at Verulamium were given in some detail in *The Times*, 12 September. At the meeting of the British Association held in London in September, Dr R. E. Mortimer Wheeler described the progress made and the recent discoveries, which include the remains (as reported) of a *triumphant* arch, the only one in the country. (*The Times*, 28 September).

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A report (p. 494) on the Roman villa found at Magor Farm, near Camborne, Cornwall, has kindly been prepared for us by Mr Bryan St. J. O'Neil of H.M. Office of Works. Notes were printed in *The Times*, 15, 22, 30 September.

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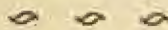
Inscriptions and rock-carvings are reported from the caves of Kitaba, in the French Sudan, which hitherto have been 'closed' to competent investigators. (*The Times*, 22 September).

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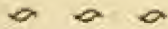
The excavations at Colchester last autumn, on which a note is printed on p. 487, were recorded in *The Times*, 22 September.



An interesting account of the excavations at Lemnos by the Italian Expedition, and of discoveries made elsewhere in Greece, is printed in the *Manchester Guardian*, 25 September.



Remains of wattle-and-daub material are stated to have been found at Luddesdown Court, near Gravesend. (*The Times*, 29 September).



A chariot of Imperial days has been found at Pompeii by Professor Maiuri, and appears to be in good preservation. (*Morning Post*, 3 October).



Particulars of work carried on at Ithaca by Mr Heurtley for the British School at Athens are given by Sir Rennell Rodd in *The Times*, 9 October. Attention has centred on the prehistoric settlement at Pelikata, where a number of Helladic vases have been found.



Wall paintings on gypsum, dating from 1st century A.D., have been uncovered by the Greek Archaeological Society on the site of Ancient Sparta, in a mausoleum in a ravine between the Eurotas river and Mount Taygetos. (*The Times*, 9 October).



Among the illustrations of archaeological interest published in recent numbers of *THE ILLUSTRATED LONDON NEWS* are the following :—

Funerary pottery, a fine stele of Crito and Timarista of 5th cent. B.C., and a stone sarcophagus of 6th cent. B.C., from the necropolis of Cameirus, one of the Dorian cities of Rhodes mentioned by Homer, and now being excavated by Dr Giulio Jacopi, who is responsible for the monuments in the Italian Islands of the Aegean. (18 July).

The ritual pre-Roman chariot, 7th cent. B.C., from Strettweg, near Judenburg, in Styria, which was found in 1853 and is now in Graz Museum, and other remarkable finds of later excavations. (18 July).

NOTES AND NEWS

A unique chryselephantine figurine of a Minoan mother-goddess ('Our Lady of the Sports') found in Crete by Sir Arthur Evans, who contributes an article on its remarkable craftsmanship. (25 July, with one plate in colour).

Pottery, bronze weapons, and pit dwellings (c. 2000-1400 B.C.) from Anyang, Ch'eng Tzu, and Wa Chia Hsieh in China. (8 August).

Etruscan sculpture: funerary portraiture and decorative reliefs found in the tomb of the Pellegrina at Chiusi, Italy. (22 August).

Greek statuary (5th-4th cent. B.C.) from the Agora at Athens. (29 August).

Discoveries from Toltec sites in Mexico, with note by Dr Thomas Gann. (29 August).

Terra-cotta reliefs found in the necropolis of the Isola Sacra, at the mouth of the Tiber, which illustrate in an interesting manner the trades of the miller, baker, blacksmith, surgeon and wine-merchant of Ancient Rome. The one from the sarcophagus of a wine-merchant shows a lighthouse of four storeys. (12 September).

Funerary pottery, idols, and stelae from a graveyard at Anibe in Nubia, c. 2000 B.C. (19 September).

The Temple-tomb of the House of Minos in Crete found by Sir Arthur Evans, who describes in detail its importance. The illustrations include the gold signet-ring which led to the discovery of the tomb. (26 September).

Mosaic floors from a 6th century monastery at Beth Shan, in Palestine. (3 October).



The discovery of a large sculptured stone representing a manifestation of the god Shiva as the creator, protector and destroyer of the World is reported. The stone was found on Golanji Hill, near Parel in the Island of Bombay, and is described and illustrated in *The Times*, 31 October, pages 9 and 14.

Some Recent Articles

This list is not exhaustive but may be found convenient as a record of papers on subjects which are within the scope of ANTIQUITY. Books are occasionally included.

Survivances des civilisations méditerranéennes chez les Berbères, par F. Benoit. *Revue Anthropologique*, 1930, XL, 278-293.

Cratères et Candélabres de Marbre trouvés en mer près de Mahdia [Tunisie], par A. Merlin et L. Poinssot. Published by the Tunisian Government [agents: Tournier, Tunis; Vuibert, 63 Bd. S. Germain, Paris] 1930. pp. 143, with 40 plates and 9 figs.

Readers of M. Merlin's article in ANTIQUITY (IV, 405-414) will be glad to know of this fine book in which some of the finds from the wreck of Mahdia are dealt with and fully illustrated.

The bath-house at the fort of Chesters (Cilurnum), by Sir George Macdonald. *Arch. Aeliana* (Newcastle-on-Tyne) 1931, ser. 4, vol. VIII, 219-304, with numerous plans and illustrations.

This little monograph is an elaborate and detailed study of the bath-house in question, and it will be indispensable to all future excavators and students of similar remains.

L'Acheuléen supérieur de la grotte d'Oumm-Qatafa (Palestine), par René Neuville. *L'Anthropologie*, 1931, XLI, 13-51, 249-263.

Œuf d'autruche gravé et peint, et autres trouvailles paléolithiques du territoire des Ouled Djellal (Sahara septentrional), par l'Abbé Breuil et le Docteur Clergeau. *L'Anthropologie*, 1931, XLI, 53-64.

L'Age de l'art rupestre nord-africain, par Hugo Obermaier. *L'Anthropologie*, 1931, XLI, 65-74.

Concludes that the alleged pleistocene age of the North African rock-carvings is unproven and unlikely. 'The appearance, amongst these representations, of species that had long been domesticated is in direct conflict with the theory of a pleistocene, palaeolithic date. We think we shall not be far wrong in assigning the earliest of these artistic efforts to a later period—to one in which North Africa was already occupied by pastoral and agricultural peoples'.

Notes on the Parthian campaigns of Trajan, by R. P. Longden. *Journal of Roman Studies*, 1931, XXI, 1-35.

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Hadrian's Wall : 1921-30, by R. G. Collingwood. *J.R.S.*, 1931, **xxi**, 36-64.

A clear summary of the extremely important excavations that have taken place during this decade.

Five town-walls in Hispania Citerior, by I. A. Richmond. *J.R.S.*, 1931, **xxi**, 86-100.

Describes the walls of Lugo, Astorga, Barcelona, Léon and Zaragoza.

Woodeaton coins, by J. G. Milne. *J.R.S.*, 1931, **xxi**, 101-109.

An account of Roman coins from the mysterious but prolific site on Middle Hill near Oxford.

Essai de Coordination des périodes archaïques de la Mésopotamie et de l'Élam, par L. Ch. Watelin. *L'Anthropologie*, 1931, **xli**, 265-272.

Stelés funéraires Gueznaïa (Rif méridional), par les docteurs Russo et J. Herber. *L'Anthropologie*, 1931, **xli**, 289-304.

An interesting account of wooden anthropomorphic gravestones. Nothing is however said, perhaps because the inference is assumed, of the obvious connexion between these gravestones and the dolmen-idols of the megalithic culture. The survival of what seem to be modern dolmen-idols still in use in Morocco would be a highly important fact.

El origen de la columna de tipo mediterraneo, by Martinez Santa-Olalla. *Ipek*, 1929, 35-45.

Connects the column whose top is wider than its base with the supporting-structures (monolithic and T-shaped, or of many stones piled one on the other) of Balearic 'cyclopean' huts.

Die Aeltesten beziehungen zwischen Asien und Afrika nachgewiesen an den Haustieren, by H. Hilzheimer. *Africa*, 1930, **iii**, 472-83. (English summary).

Zur Anthropologie der prähistorischen Griechen in Argolis, by C. M. Fuerst. *Lunds Universitets Arsskrift*, N.F. Bd. 26, no. 8, 1930.

All contributions to Greek anthropology are welcome, particularly those forming the subject of this article, which belong to the Middle Helladic period.

Report on the Excavations at Hembury Fort, by Dorothy M. Liddell. *Proc. Devon Arch. Exploration Society*, 1930, **i**, 40-59, numerous illustrations.

L'Art Byzantin (15th vol. of the series called 'The Grammar of Styles', by Henry Martin). Librairie R. Ducher, 3 rue des Poitevins, Paris, 6^e. 65 illustrations. 10 francs (unbound).

Reviews

THE ARCHAEOLOGY OF ROMAN BRITAIN. By R. G. COLLINGWOOD. Methuen 1930. pp. xvi, 293, 8 plates and 68 figures. 16s.

This remarkable book is a delight to those who read it, and a triumph for its author, who only hints at how difficult it was to write. But we may gauge how far it advances beyond older treatments of the same theme by comparing it with John Ward's two books, published long ago by the same firm. These were excellent and much in advance of their time; but their author built too solidly upon too slight a foundation of fact, and since then facts have accumulated too fast for most students to digest. Mr Collingwood, however, grew up with most of the new facts, and that is part of the secret of his success, the other part being clarity of thought and expression. All who are interested in the Roman world, and, philosophically, in the attitude of mind which the study thereof develops, will read this book with admiration and gratitude. It provides the text-book which the study of the British province has long demanded.

The condition of most of the chapters shows that the material considered is now sufficient to admit of classification. Where it is not, the author does not hesitate to say so, and, even then, usually succeeds in advancing the problem a stage further by defining it precisely. But it is of interest to see which sections a later edition should amplify, if workers follow the lead given by the book as it stands. The 'flying-column' type of exploration, inaugurated by Haverfield and Macdonald, would, if revived, greatly enlarge our knowledge of field-entrenchments. A new edition of Hyginus would greatly help the dating and interpretation of the text upon which knowledge of these entrenchments is based. We doubt whether many troops mentioned in that work can go back to Trajan's time, and prefer a third-century date. The classification of Scottish marching camps by Schulten, according to size, is worth attention, and deserves mention here, while further exploration might show that the *tutulus* was used with earthen ramparts, and the *clavicula* with turf-work. The reviewer ventures to doubt whether Hyginus is really prescribing them for use together. The term 'semi-permanent camp' will, perhaps, disappear, giving way, as knowledge grows, to 'siege-camp' and 'manoeuvres-entrenchment'†. But these are prophecies, made to illustrate the stimulating effect of this particular section.

Equally stimulating and valuable is the section on forts. We suggest that there is sufficient evidence that it was the Severan age when artillery-defence began in earnest, for *ballistaria* at Carnarvon and York take the change into a wider field than the Wall-district, while the new third-century walls, as at Rome, are entirely planned upon the conception of artillery-defence. Very useful is the classification of Saxon Shore forts, with the early examples of Reculver and Brancaster, hinting that estuarine defences preceded organized patrols along the coast. In a previous note in this Journal,* we have pointed out the place of St. Laurent-sur-Othain as a dated simple type. In detail,

† Or 'marching-camp'?—EDITOR.

* ANTIQUITY, September 1931, p. 349.

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the account of Melandra must be amplified by a reference to *Excavations at Toothill and Melandra*, where a double gate in timber is described, with traces of a wooden *principia*. We hope that the fort, seen from the air by the Editor at Castor on the Nene, will soon be available for inclusion in the multiple-ditch series; and we should have very gladly seen Hod Hill included as a regular Claudian earthwork. Also, in connexion with the size of forts, it must be mentioned that most large ones must have been for *alae* rather than *cohortes milliariae*, having regard to inscriptions and *diplomata*. We should also have liked the author to have used, in dealing with signal-stations and lighthouses, the quotation from Venerable Bede on *fari*, which he made to the reviewer long ago.

The account of the frontiers will be extremely welcome as a non-technical account of the complex problems presented by Hadrian's Wall. If, however, Housesteads is historically earlier than the Wall, it should be observed that only its rounded north angles suggest this; and similar angles are possessed by Birdoswald, which comes between Turf and Stone Walls in date, and is not associated with the Vallum. The evidence for an early site at Chesters might also have been mentioned. There is no account of the Wall-ditch, and the angle of its sides was not everywhere that given in fig. 21.

On the Antonine Wall, there is now more evidence to hand for a second and short occupation than was available in 1911, since both Bahnuidy and Old Kilpatrick produced new facts bearing upon the point. But the author wisely cautions against too rapidly accepting the tempting conclusion that this Wall lasted beyond the days of Ulpian Marcellus.

In connexion with town-walls, we find ourselves in entire agreement with the observations on Silchester, which would tend to date the Wall fairly early; and would venture to point out another early feature in the not far-distant town of Cirencester, namely, the setting of the west gate in a re-entrant. In connexion with baths, we wish that the later baths at Wroxeter had been included, since these are the only British analogue yet discovered to the large town-baths of the Continent. The absence of really large halls for social intercourse is a striking commentary upon the smallness of British towns. Only the amphitheatres serve to arrest the growing impression that really enduring corporate life was lacking.

Most valuable is the commentary upon country-houses. It would be interesting, however, to know whether courtyard houses were influenced by the classical country-houses with large wings and a vista in front of them, such as appear in first-century landscape paintings and parkland houses like the Domus Aurea and its analogue embodied in Hadrian's Villa at Tivoli. A re-arrangement of the last part of section four and of section five upon this scheme would at least be interesting, and might classify rather more conveniently. The section on the Basilican house, with continental parallels, is of real help in reminding us that this house may once have been more general than extant remains suggest. But there are still the Irish and Scandinavian parallels to be fitted in, demonstrating the really primitive nature of the type.

The section upon the Celtic temples might have profited by the inclusion of the Autun example, where the evidence for form is so clear. But even more interesting is the descent of this type to the Swedish and Germanic *Stavkyrke*, shortly to be published by Dr Boethius. *Mithraea* are rare enough for us to welcome the plan of Housesteads *mithraeum*, and to agree with the author in seeking another explanation of the example claimed for Colchester.

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To the chapter on tombs there is little to add. But the recent discovery in Rome that pipe-fed tombs often received new deposits of family ashes in this way, after each fresh cremation, should give us pause before accepting all such remains as libation channels.

The chapter on inscriptions opens a commentary upon the smaller relics which is a masterly classification, with many new features, while the drawings for these whet our appetite for the author's new work on the Roman inscriptions of Britain. We rejoice to see the Ravenscar inscription taking its proper place among building-records, and wish that all the photographs had been as good as this drawing. Many readers, for example, will miss the delightful floral scroll in the background of the panel containing Victor the Moor (plate III). The chapter upon Samian ware is an ideal treatment of a difficult subject in limited space, and we particularly admire the crisp definition of the changes in types. The treatment of coarse ware is also good, if the beginner will observe all the cautions given in using it, and it will form an admirable starting point for study. So will the brooches, with the difference that, while types of coarse pottery were familiar to most excavators, the classification of brooches covers new ground to most experts, and will form the basis for all future study of Romano-British brooches. There is little to say about the chapter on implements, except that it fulfils its purpose admirably, demonstrating the essential likeness, from age to age, of all simple hand tools. The writing tablets really class as inscriptions, but special praise must be given, not only to the illustrations, but the skill which went to decipher the text. Finally, a complete set of good examples of Emperor-portraits on coins, from Augustus to Honorius, supplies a long-felt want, common both to excavators and the general public.

IAN A. RICHMOND.

TYPOLOGISCH-CHRONOLOGISCHE STUDIEN ZU METALLSACHEN DER VÖLKERWANDERUNGSZEIT. I. Die sächsischen Spielarten der provincial-römischen Zwiebelknopffibel. II. Die gleicharmige Fibel. By FRITZ ROEDER. *Jahrbuch des Provinzial-Museums Hannover*. N.F. Bd. 5, 1930. [August Lax Verlagshandlung, Hildesheim]. pp. 128, 86 figs. in text and 22 plates. Price not stated.

Professor Roeder is now well-known to us for the thoroughness and enthusiasm with which he is working upon problems of the earliest Migration Period, and when he does at last produce his 'History of the Conquest and Colonisation of England by the continental Germans' there is no doubt whatever that it will be a most notable book. He has already given us three preliminary papers of considerable importance (cf. *ANTIQUITY*, II, 360 for one of these) and we have here a fourth which is in fact his longest and most ambitious excursus; it contains detailed accounts of two complete brooch-families that are singled out for this special treatment because they come within a select group of antiquities regarded by the author as the *Leitfossilien* of his period. The first section of the work is concerned with the Saxon relatives of the provincial-Roman cross-bow brooch, among which are two English representatives, one from Luton (dated ± 400) and the other from Kempston (dated ± 425); the second half of the paper deals with the equal-armed brooches, which are divided into seven types, our English examples coming in the three which are morphologically and chronologically late. Thus the Kempston equal-armed brooch, with geometrical chip-carving only (type v), is dated ± 450 ; the Sutton Courtney brooch, with a scroll-ornament and marginal animal-forms (type vi), is dated ± 475 , and the two Cambridgeshire brooches,

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which have in addition projecting animal-heads (type VII) are put down as ± 500 . The dating of these last two types is the least certain of Professor Roeder's results and we must hope that a little more evidence on this point will be forthcoming some day; but on the whole I see no reason for disputing the author's chronological scheme, even though I should like something safer than Plettke's chronology of the Westa-Wanna pottery as principal foundation of the structure. Still I must admit that this seems to be a reasonably solid basis, for three N.E. Gaulish equal-armed brooches of Roeder's type II were found with coins of 360-80, and this is in close agreement with Plettke's date for the urns found with the Saxon examples of the type II brooch. In addition to the account of the brooches the paper also contains a short introduction that may be read with profit by students of the initial Saxon colonization of this island, and a section dealing with the 'shield-grip' brooches (p. 44ff). The illustrations, which are numerous and excellent, provide us with a very large quantity of hitherto unpublished material. We await Professor Roeder's further studies with impatience. In the meantime I make him a present of the fact that the Richborough pearl- and crystal-encrusted potsherds, about which he enquired in his 'Window-urn' paper, are safe in the Liverpool museum.

T. D. KENDRICK.

THE SARCOPHAGUS OF AN ANCIENT CIVILIZATION: Petra, Edom and the Edomites. By GEORGE LIVINGSTONE ROBINSON, *with an introduction by* DR W. F. ALBRIGHT, Professor in Johns Hopkins University and formerly Director of the American School of Oriental Research, Jerusalem. *New York: Macmillan Company, 1930. pp. 495, with 86 illustrations (2 in colour), 10 detail plans, and map of Edom. 31s 6d.*

Of the 32 chapters 7 are by other contributors, all except one former professors at the Beirut American University. The Author in a foreword tells us that 'we offer our contribution therefore not so much to correct or even to convince, as to register our impressions of the vast necropolis'. The impressions were gathered in five journeys between 1900 and 1928 made on horseback, by rail and by car. The journey may now also be made by air and a motor road goes into the village of Elgi, within three miles of the Sik. Dr Robinson discusses at length the religious question, with a particular interest in 'High Places'; he himself discovered the largest in Petra at Zub Atuf, but whether these were connected with Dushara 'him of Seir' or not, he expresses no opinion. Zub Atuf—the phallus of Atuf—from other evidence seems to date from the last half of the 1st century A.C. Chapter XIII is devoted to 'ancient high places in the O.T.', but seeing that Petra dates from the reign of Cyrus 558-529 B.C., we do not get much further. Nabataean Petra and Biblical Edom have nothing in common, the latter remarkable for the spite the Jews bore it. Outside Petra on the highest mountain is the Moslem shrine of Jebel Haroun—the Tomb of Aaron. The largest spring is the spring of Moses and the whole area is the valley of Moses, as it was to the Crusaders who credited the monuments to the children of Israel. Whatever value these sites may have as the source of Biblical tradition, they have a respectable antiquity, being recorded by Josephus; Dr Robinson will have none of them, finding the burial place of Moses in the Wadi Arabah, a pure guess.

Of the importance of Petra as the centre of a great civilization, in close contact with Persia, with Selucids, with Ptolomies from whom they borrowed their architecture, an emporium whence trade moved in a vast stream from east to west and vice

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versa, the predecessor of Alexandria, Palmyra, Constantinople, Venice and London in the distribution of the East India trade and the still more ancient trade in incense from South Arabia, there is nothing.

As a book it is useful, it is in English, it gives all the Biblical references to Edom and most of the classical to Nabataea but adds little to our knowledge of Petra and offers no solution to the problem of the why and the wherefore, nor any answer to the hundred and one questions that arise in the mind of everyone who has visited the place. The authors are moved sentimentally by the scenery, the colour and the form of the rocks, but have never heard of the Hamra further south, of the same colour, more extraordinary in its form and extensive variety, yet so rarely visited.

G. HORSFIELD.

BYZANTINE MOSAICS IN GREECE: Hosios Lucas and Daphni. By ERNST DIEZ and OTTO DEMUS. *Harvard University Press, Cambridge, Mass. 1931.* pp. 117, with 15 plates in colour, and 136 figures in half tone. \$8. [Oxford University Press].

The book deals primarily with the mosaics of Daphni and Hosios Lucas, but in the process of the examination some welcome additions are made to our somewhat scanty knowledge of the mosaics of Nea Moni on Chios, of Nicaea, of Seres in Macedonia and elsewhere. The admirable decoration of the church at Daphni has been universally recognized, since the classical study by Millet, as one of the finest monuments of the mid-Byzantine period that have survived. The mosaics of Saint Luke are here, for the first time, given the really important place in the history of Byzantine art that they deserve. For although already published and studied in detail by more than one authority, they have never been regarded as of the first importance. The reasons for this are at once shown by detailed examination, for, with the exception of the Pantocrator in the dome and a few other subjects, the Daphni mosaics belong to the pictorial, representational, Hellenic tradition, whereas those of Saint Luke are in the monastic, hieratic style of the East, which places a greater importance on the inner meaning of the subject than on pleasantness and accuracy of representation. The one style has long been understood and appreciated; the other, until lately regarded as primitive and repulsive, is only today coming into its own. We thus see in the two monuments under discussion the two main traditions in Byzantine art, the one seeking ideal representation and beauty of form, the other delving below the surface and treating the purely representational side with carelessness.

This is without doubt one of the most important books on Byzantine art that have appeared during the last ten years or so and it is to be hoped that it will prove to be the forerunner of a series of studies of the same nature in the future. The joint authorship, too, seems a happy and markedly successful combination. To the pen of the one author, Diez, we are indebted for the first chapter, a most interesting general survey of Byzantine art of the middle period. Attention is here drawn to a notable fact usually disregarded; namely how surprising it is that the art of the Macedonian and Comnene periods was not more affected by foreign influence. The capital was not only a veritable repository of the products of all the arts of all civilized or semi-barbarian lands, but it was also a thoroughly cosmopolitan city. Yet the old guilds, through innate conservatism, maintained the purity of Byzantine art and even produced the most subtle and mystical examples of it. We are prone to discuss and to stress the importance of the various elements, Greek, Roman, Hellenistic or Oriental, which together composed

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Byzantine art, yet to forget the power of what was, by the tenth century, purely Byzantine. Diez points out how absurd would have been a synthesis of Hellenistic, Chinese, Persian, Bactrian, Indian, Islamic, Scythian or East Slav elements, if unrestrained by the conservatism of the Byzantine guilds (p. 15). Rather less clear are some remarks on page 18 :—' Thus we should have found the same subjects depicted on the tapestry and clothes as we find on the sarcophagi which have been preserved. According to these and other examples, the later mural and mosaic painting was descended from an original tapestry with figural weaving and embroidery, as Kraus has remarked '.

Although the mosaics of Sicily are in the tapestry style, the question of descent is a more complicated one and there are many facts which suggest that the actual parentage lay in exactly the opposite direction. One cannot throw aside the evidence afforded by the wall-paintings of Rome, of Alexandria or of ancient Egypt in a quest of this nature, in favour of somewhat hypothetical woven stuffs or embroideries which are certainly of later date.

The second chapter, by the same author, contains much illuminating material, especially that which traces the evolution of the underlying spirit of a great deal of Christian art from early religions of the east Mediterranean, as well as from the Mazdaic cult. The real importance of the Dura paintings is brought to light, not only as regards content and symbolism, but also in respect of their artistic convention. But, like his former master Strzygowski, Diez seems apt to jump to somewhat hasty conclusions when speaking of Mazdaism, for he remarks that the Dura frescoes show 'for the first time painting in full face'. They may be the first wall-paintings in this manner; but in tracing the effect of the full-face posture in later Byzantine art, the tomb portraits of Egypt cannot be disregarded. They developed apart from Mazdaism and exercised, at any rate as far as panel painting was concerned, a considerable influence on the later art of the Christian East.

The third chapter, which deals with the iconography, is the work of Demus. He points out the essential differences which distinguish the painted or mosaic decoration as we see it in the two churches under discussion from other styles in mosaic, such as the picture compositions of Saint Mark's or the tapestry-like conventions which we find in Sicily. He then discusses the arrangement of the scenes and subjects throughout Byzantine church decoration, a continuation of the work inaugurated and carried so far by Millet. More elaborate, however, is the admirable discussion of the iconography of individual scenes which follows. Such work is of the first importance in tracing out the history and parentage of individual groups of monuments and it comes as a most welcome continuation of the pioneer work of Millet.

In the following chapter, by Diez, the importance of colour is stressed from a symbolic as well as from an aesthetic point of view. There were, in fact, in the hieratic oriental art which we see at Saint Luke's, as strict rules for the use of colouring of dress as there were in iconography. But the more subtle colouring, which we see in the shading or in the faces, is of the first importance in the determination of date, school or artist. As the author aptly points out, the importance of colour has till recently been neglected and it will not be long before a majority of coloured plates becomes an essential in every book of art criticism.

A short chapter on the work of different masters in the churches under discussion follows, wherein Demus calls just attention to the universal mediocrity of style which an over elaborate restoration has given to some of the mosaics of Daphni. In the seventh and last chapter the same author discusses the dissemination of the various mosaic

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styles of the middle Byzantine period. That which we see at Saint Luke's is closely related to work in Saint Sophia at Salonika; it develops elsewhere, chiefly in the more distant monasteries, and ends at Venice in a decline, brought about by the adoption of the more elegant, less austere, 'court style' which we see at Daphni. This latter style spreads as widely as the monastic; we see it in Sicily in the twelfth century and in Venice it reappears in more than one wave.

The book closes with an historical appendix, dealing with all the mosaics of the period which have entered into the discussion; a system which is to be highly commended.

A few words may be said as to the apparatus of the book. The plates are plentiful and excellently reproduced; the large number in colour (15) greatly adds to the value of the book. But these would have been better placed, together with the half-tone reproductions, at the end of the volume, instead of throughout the text. The colour plates are mounted on dark paper, so that there is no excuse for the fact that no descriptions whatsoever accompany them. In a production in many ways so admirable this is regrettable. The absence of an index is a grave error.

D. TALBOT RICE.

THE GREEK TRADITION IN SCULPTURE. By WALTER R. AGARD. *Baltimore: Johns Hopkins Press (London: Oxford University Press), 1930. pp. 59, with 34 figures. 13s 6d.*

This book, primarily perhaps intended for the American public, doubtless contains a 'message' (I think that is the correct word) for other peoples too. Professor Agard first introduces his readers to the social, as well as to the aesthetic, aspects of Greek sculpture, well restating familiar matter. The brevity of the treatment probably accounts for some statements which seem sweeping or perfunctory: and the whole conclusion of the matter smells somewhat of the lamps which illuminate the shrine of the Hellenist: but he who would proselytize must needs idealize, and with the general principles enunciated no amateur of Greek art will quarrel. Professor Agard sums up by stating that Greek sculpture was a 'community art', not something for the precious few: its aesthetic significance lay in the creation out of marble or bronze by the sculptor's own hand of forms which appealed to the emotions; and, to judge rightly, we must go to originals and not to photographs or casts.

We are on less firm ground when dealing with the continuance of the tradition, because too often the manners are aped while the spirit is not expressed; and Professor Agard steps delicately here, since (as he observes in conclusion) it is not enough to recapture technique: we need to restore the spirit of those times, the wholesome attitude towards life. The tradition made its way into India and China: in Europe it struggled on into the Middle Ages, and flared up at the Renaissance; better understood by study of the Parthenon sculptures, it was driven by the insipidity of the Canovas, the Thorvaldsens and the Flaxmans into a moribund academism from which the realists revolted. The revolt, however, was not against the Greeks: and Rodin saw that to them the world would return for health and rest. And now, Professor Agard hopes, a generation of sculptors trained in Greek art as revealed by excavations will fulfil Rodin's prophecy—if and when society produces the favourable conditions.

So far, good; but if sculpture is to be once more a 'community art', it must produce works which have no taint of the academic and unfamiliar: and most communities lack that fortunate environment which enabled the Greek sculptor to portray, without departing from the common experience of the 'man in the street', the human

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form in the two modes ideally suited to sculptural representation, the nude and the draped. Even if in our athletics we accustom ourselves to the former, our climate and our ways of life seem to preclude the reproduction of the graceful folds of Greek drapery : and we await the advent of a great sculpture which shall exploit aesthetically the common man as he ordinarily appears.

Professor Agard's sense of form and structure should not have allowed his printer to inflict ' derivative ' on us, or himself to write ' Bourdelle was a professed enthusiast about Greek art '.

W. L. CUTTLE.

THE BRONZE AGE. By V. GORDON CHILDE. *Professor of Prehistoric Archaeology in the University of Edinburgh.* Cambridge University Press, 1930. pp. 258 and illustrations. 8s 6d.

Professor Childe has undertaken a difficult task. If he has not altogether succeeded it is not because he has not made a gallant effort, or was not well equipped for the task. But is it really possible to compress a summary of the many phases of the Bronze Age of Europe, worthy of the author, into less than 247 small pages ? (This number of pages includes many full page and other illustrations).

The average person, who wishes to gain a general idea of the European Bronze Age, in reading this book would probably feel that he could not see the wood for the trees, while the professed archaeologist, desirous of a study of any one region or phase, would necessarily look for less generalization and more precision of detail. The achievements and ability of Professor Childe are universally and justly admired, and it is on this account that regret must be felt that he was prevented from doing himself justice within the narrow limits prescribed in this little book. A book of the same size, by the same author, dealing with any one of the regions here dealt with would be of real value to the archaeologist and welcome to the general reader.

A summary of the contents will give an idea of the scope of the book, and of the wide areas of which it treats. Chapter I, The Implications of the Bronze Age, relates the discovery and manufacture of bronze, the dating of its use in the East and the eastern Mediterranean, and its subsequent introduction into Europe. Chapter II, Metallurgy and Trade, deals with mining, casting, trade routes and the chronology of the Bronze Age. Chapter III is an admirable and valuable study of typology. The following chapters deal with the three divisions of the Bronze Age : early, middle, and late. In the early period Central Europe, Upper Italy, Spain, and Great Britain are surveyed ; in the middle period Scandinavia, the tumulus Bronze Culture, the Italian Terremare, Hungary, the Rhone culture, Great Britain ; and in the late period Sicily, Sardinia, the Villanova culture in Italy, the Lausitz culture, the Alpine urnfields, the North, Hungary, Russia, Great Britain. There is a final chapter on Races, and the book is completed with a useful bibliography and Index.

Naturally many points arise that lend themselves to criticism. The limited space available leads to short unqualified statements, and so few things in prehistoric archaeology really admit of such treatment. For instance it is said (p. 155) that objects of Nordic type, battleaxes and flint daggers, never occur with beakers of class B, in Britain. Wiltshire alone affords at least one well attested exception to this. Is there really any evidence that our Bronze Age ancestors inhabited a site from one to five years and then moved on ? It is a little difficult to see why disc-barrows should be included in the early period seeing that the burials in them, so far as known, are invariably after

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cremation, while the Beaker people, characteristic of the early Bronze Age in Britain, almost invariably inhumed. Surely the outstanding feature in connexion with the discovery of 'incense' cups with burials in barrows, is that they usually accompany cinerary urns or simple cremations, and were not used themselves to contain the remains; to state that they sometimes contain cremated remains, without qualification, really confuses the point. The illustration of a 'grape' cup (p. 188) hardly does justice to a form of vessel that is almost entirely confined to Wiltshire. In connexion with the end of the Bronze Age in England it is scarcely justifiable to say that the newcomers who introduced late Hallstatt types of pottery into southern Britain, as represented at All Cannings Cross and elsewhere, only arrived in La Tène times, because brooches of La Tène 1 type are found. All Cannings, for instance, certainly survived into La Tène 1, and the brooches are at least as likely to belong to the latter end of the occupation as to the beginning. They cannot therefore be used as evidence for the late arrival of the people using late Hallstatt types of pottery. These are all, no doubt, minor points, but they serve to show that over-compressed treatment is not well adapted to matters dealing with still doubtful, and therefore highly controversial, points of prehistory.

M. E. CUNNINGTON.

A HISTORY OF THE VIKINGS. By T. D. KENDRICK. *Methuen and Co.*, 1930. pp. 412, with 28 illustrations and 28 maps. 18s.

Such a book as this was an urgent desideratum. Apart from Keary's well-known *Vikings in Western Christendom* (1891), there was no substantial work in English of real historical value devoted solely to the history of the Viking movement, and that work is now largely obsolete, owing to the amount of research that, since its publication, has taken place, with astonishingly fruitful results, not only in Scandinavia itself but in other lands as well. The bibliography of the subject has now reached immense proportions, and the scholarship necessary to cope with it, in practically every European language from Russian to Irish, is such that no one living man can master it at first hand. Yet not the least impressive thing about this work is the evidence of how thoroughly conversant Mr Kendrick is with the whole field of study, and it will be a very long time ere his book can be superseded.

After a 40-page Introduction designed to 'orient' the reader as to the general significance of the great Viking movement, Mr Kendrick devotes four chapters to an admirable general survey of the Scandinavian lands and peoples from the earliest dawn, down to the time when that northern *officina gentium* began to pour forth its surplus stock over Europe in the 9th and 10th centuries of our era. The remaining two-thirds of the book describes the history of these Viking invasions in each different country in turn—Russia, the Baltic coasts, the Western Empire, the British Isles, France, Iceland, Greenland and America. To deal adequately in 400 pages with such a vast mass of material, a book must needs be, as this unquestionably is, relentlessly pruned.

Up to a point that is all to the good; but the result is that Mr Kendrick's work is a chronicle of events rather than a history. It is strongly reminiscent, as much in style as in matter, of a lengthy encyclopædia article. On the inner and social life of the Vikings, on their culture in the widest sense, it suffers by comparison with, for example, the brilliant studies of the late Dr Alexander Bugge. But it is bad criticism to blame an author for not doing something he never set out to do, and it would be churlish indeed not to be grateful for such a comprehensive, accurate and indispensable record of Viking

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activities. It is impossible here to enter into discussion on any of the points raised and it is the less necessary as the author has studiously avoided controversy. His book can be accepted as a carefully weighed statement of 'the best that is known and thought in the world' today on the sequence of events in Viking history.

English readers will naturally be most interested in the Scandinavian influence on our own country, and here, if Mr Kendrick errs, it is on the side of understatement. Linguistic evidence alone shows that influence in various fields to have been profound. But even more interesting is the growing evidence of the early date at which contact was first made between this country and Scandinavia. Before Pytheas visited Norway about 330 B.C., he must have been told in the north of Scotland of the route thither; a fact which implies prior contact of course. The oak-tree coffins of the early Bronze Age found in Yorkshire and Denmark, and the Bronze Age gold lunulae of Irish type found in Denmark point to the same thing. But even earlier still, at the end of the megalithic period, Mr Kendrick suggests that the port-hole cists imply a connexion between Western England and Sweden, though he is cautious enough to explain this through the media of Northern Germany and Northern France. Messrs Peake and Fleure, however, are much bolder, and affirm downright (*The Way of the Sea*, p. 161) that about this time (2000 B.C.) the custom of erecting dolmens had already arrived in Denmark by way of the sea around the north of Scotland. Such a statement is sufficiently staggering, but about that time apparently voyaging over the open ocean was really taking place, for amber ornaments found in Jaeder in southwest Norway are believed to have been imported direct from Jutland.

Considering the difficult character of the text, misprints are remarkably few—the most noticeable being the regular appearance of *futharc* for *futharc*. The binding, however, is unworthy of the excellence of the contents. H. MARWICK.

DIE NORMANNEN DER WIKINGERZEIT UND DAS LADOGAGEBIET.

By W. J. RAUDONIKAS. *Vitterhetsakademiens Handlingar* 43:3. Stockholm, 1930. pp. 151 with 123 figs. and map. 10 kr.

Aldeigjuborg, the Viking stronghold on the upper Wolchow close to Lake Ladoga, was the starting point of the Swedish commercial and military enterprise in Russia that led ultimately to the foundation of the vast Swedo-Russian principality of Kiev. Dr Raudonikas of Leningrad had therefore a useful and an important task before him when he set out to describe in book form the archaeology of this settlement and of the southern Ladoga lands. It is admitted that a good deal of hard spade-work has still to be done, but the results already achieved are by no means negligible, and Dr Raudonikas has certainly succeeded in providing an interesting supplement to our imperfect historical knowledge of this region in Viking times. There is no doubt, of course, of the existence of a fortified settlement at Staraja Ladoga, and the identification of this with Aldeigjuborg is well nigh certain; moreover antiquities of Swedish origin have been recovered from its oldest stratum, so that the presence of Swedes here when the site was founded in the 9th century may be taken as proved, this being what the written record had led us to believe. A number of tall barrows, the 'Sopki' of Wolchow type, may possibly be the graves of the early Viking population, though we know all too little about their contents; but as to the other and less imposing barrows of the Ladoga neighbourhood, Dr Raudonikas prefers to call them Finnish, while admitting that they do nevertheless contain much material from Uppland. 'Natives', he says, were buried here, namely the

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Wepsen of Finnish stock, and on this view the Swedish brooches and arms deposited in these barrows must be regarded simply as lawful profit obtained from the busy Swedish traders for whom their land was a thoroughfare. The book gives us an inventory of the barrows, an excellent folding map, and good illustrations which include some important grave-groups that ought to rejoice Herr Petersen's heart; but there is no index (how often are we to complain of this?) and not even a proper list of contents.

T. D. KENDRICK.

THE ARCHAEOLOGY OF MIDDLESEX AND LONDON. By C. E. VULLIAMY. *Methuen, 1930. pp. 304, with 59 illustrations and 2 maps. 10s 6d.*

This is an excellent book. The author surveys the archaeology of Middlesex and London from the beginning of the Palaeolithic Age to the Norman Conquest, detailing all the important objects and sites found in that area, and summarizing our existing knowledge of the various phases of prehistory. His cataloguing is complete, and his descriptions of objects clear and concise; moreover his style is excellent and makes enjoyable reading. Those who are only mildly interested in prehistory will, we are confident, find their interest stimulated after reading through this book; while genuine students of prehistory will make room for it on their crowded shelves.

We should have welcomed more illustrations; but the price of the book is very low, and we have already ample value for our money.

R. C. C. CLAY.

ST. ANDREWS CATHEDRAL MUSEUM. By D. H. FLEMING, LL.D. *Edinburgh: Oliver and Boyd, 1931. pp. 270, with 129 figs. and 2 plans. 25s.*

Dr Fleming, the hon. curator of the Cathedral Museum at St. Andrews, has here produced a fully annotated catalogue of the objects preserved therein, and is to be congratulated on a very complete and satisfactory piece of work. The chief interest of the museum is in the remarkable collection of carved Celtic stonework found from time to time either built into the cathedral or in the adjacent cemetery. Many of these were described by Mr Romilly Allen in his *Early Christian Monuments*, but fully a score have been recovered since the appearance of his book in 1903. It is rather a pity that the author has made no attempt to indicate the date of this extremely valuable series, which must cover several centuries. One supposes that the earliest examples are those showing scrolled foliage and degenerated vine-ornament which descends from Anglian originals, and that the flat but accomplished carving of the splendid sarcophagus (no. 1) is comparatively late in the series. The general level of the carvings, whether on flat slabs or cross-shafts, is remarkably high, though the motives, diagonal fret, spirals and interlacement are little varied. All the examples are fully described and illustrated. The later sections of the book are devoted to medieval and post-Reformation memorials, architectural fragments and small objects. Of these sections the longest and most important is that dealing with 16th and 17th century tombstones. Some 66 of these are described and many of them figured, and though in no sense a high form of art, they form a highly attractive exemplar of the taste of the age, which is far more florid than the contemporary English style, and is still drawing some of its inspiration from continental sources. An account is given of the very complete collection of casts of the ecclesiastical seals of the diocese of St. Andrews and minor foundations in the city.

The book is well produced and we hope it will incite other similar institutions to follow so admirable an example.

A. W. CLAPHAM.

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THE CIRCLE AND THE CROSS : a study in Continuity. By A. HADRIAN ALLCROFT. Vol. II, The Cross. Macmillan, 1930. pp. 454, with illustrations. 12s 6d.

The first volume of this work appeared in 1927, and was reviewed at length in *ANTIQUITY*.* Much to the regret of all who knew him the author did not live to see the second volume published, having died at Hove in December 1929. The main purpose of these two volumes is to show 'the development of the moot from the round barrow, the *locus consecratus* from the moot, and the church from both'. How far the author has succeeded in proving his case may be a matter of opinion, but that he read widely and drew upon a large store of learning, and treated the subject with great sincerity, there can be no doubt.

The first volume was mainly concerned with the development and evolution of the circular moot from the round burial place or barrow. The second volume attempts to prove that the circular form of the early Christian churchyards was likewise due to a development from the round barrow. The author calls them Celtic barrows, and apparently maintains that the development is due to insistent 'Celtic' influence in Ireland, Wales and England. The force of the argument for continuity from the round barrow depends much upon the date assigned to the barrows. Those familiar with the first volume will know that the author's views on this subject are much at variance with those generally accepted.

These views may be gathered from the fact that it is claimed that 'the true disc-barrow, together with the character of its contents, goes to show that this type was the work of the last of the Brythonic invaders of South Britain, the Belgae, who made their headquarters on Salisbury Plain, and thence spread eastward and northward, and more particularly westward into Dumnonia and South Wales. If so, the type was at its zenith of prevalence about the Christian era'. (Vol. I, 40). It is stated (p. 423), that appendix A, 'The Chronology of Barrows' was under revision by the author at the time of his death and had to be omitted. This is to be regretted as the strength of the argument for continuity depends much upon the period that the author ascribed to the various forms of round barrows. It is claimed that the continuity from the round barrow to the Circular Christian churchyard is more clearly traceable in Ireland and Wales than in England. If there is the continuity in Ireland and Wales that is claimed, it seems more likely to be due to the pre-Celtic elements there, than to the Celts, *i.e.* people of the Iron Age. There seems little evidence that the invading Iron Age people particularly favoured circular burial places. So far as the circular form in England is concerned it seems more likely that it was due to the influence of Christian missionaries from Ireland and Wales than directly to the 'continuity' of the round barrow form in this country. The last chapter discusses the derivation of the word 'Church', and the argument is thus summarized. 'In as much as the Irish *Kil* and the Welsh *llan* denoted originally no building at all, but merely a precinct, it is not unreasonable to surmise that the Saxon *ciric* also, whatever its derivation, meant originally much the same, meant the "churchyard" rather than the "church"; and there has been adduced abundant evidence that it was so. Further it has been shown that wherever Scotie Christianity went the burial-ground was originally of circular plan. *Ciric* therefore meant in the first instance a circular burial-ground, a round barrow. The inference is that the word *ciric* and *circular* are related one to the other. As "circular" derives

* September 1928, pp. 364-7.

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from *circulus*, and that from *circus*, it is to the latter that archaeology points as the true source of the word *ciric*'. (p. 399). This is a matter that must be left to philologists. There is a good index in volume II, covering both volumes. M. E. CUNNINGTON.

MANUEL D'ARCHÉOLOGIE ORIENTALE. Par DR G. CONTENAU. Tome II. Histoire de l'Art. III^e et II^e millénaires avant notre ère. Paris: Auguste Picard, 1931.

An extensive knowledge of bibliography, the rare combination of experience in field work combined with the practice of a Museum Curator, used as the basis of a sane artistic criticism—these qualities have produced an encyclopaedic work which will remain the standard for reference on the Near East in ancient times, perhaps for as long as the Perrot and Chipiez we have all used. This second volume, taken with the odd hundred pages of the first which were not concerned with the necessary preliminaries, deals with each land by itself, and treats of the objects by classes. Every kind of archaeological student will find in it information relevant to the subject of his enquiry, and the references which will enable him to pursue the subject.

As we expect from Dr Contenau, every kind of view is noted on the various subjects, but his sanity leads him to avoid impossible hypotheses. Though he had not access, at the time of writing this volume, to the striking results of the German excavations at Warka, he has rightly discarded the chronology favoured by some recent authorities, in defiance of the published results of field work, for the earliest age in Sumer. Though we must think in indeterminate periods, rather than in measured spaces of time, the succession of civilizations is now clear—1, that marked by the use of pottery decorated with a black ferrous oxide paint on a cream clayslip or buff ground; 2, that marked by pottery with a surface painted red and burnished, sometimes picked out with geometrical patterns in black and white—also by the use of a small rectangular brick; and, apparently, at Warka, in the earliest of four clearly marked building strata, by massive stone foundations; 3, that marked by plain pottery, rarely painted with concentric circles or edge-lines, sometimes incised or ornamented with rough *appliqué* work, and by the use of plano-convex bricks—the archaic Sumerian. The sculpture of this third period Dr Contenau examines in great detail. He recognizes the essential identity of these figures extending over an area from Ashur in the north to Susa in the south, and divides them between two points of time, about 3000 B.C. to 2900 B.C. Anyone who reads this chapter carefully will find in this class of figure a difficulty which is inherent in the archaeology of Babylonia. There are few reliable criteria. Many features which might seem to be criteria—features of dress, hair-dressing, the wearing of beards etc.—prove not to be so when reliable evidence from inscriptions is available. At present the only safe guide is the style, and where the style of all is primitive, the difficulty of the study is obvious. Dr Contenau's judgments will in general meet with assent, but details must remain open for discussion. The present writer for instance cannot believe that the cross-legged statue in the Ny Carlsberg Glyptothek (fig. 376) is later than the rather sophisticated little woman in the British Museum (fig. 367). The section on the sculpture of the Gudea period is very full and valuable, and the treasures of the Louvre from Susa, many of them previously unpublished, make the book indispensable. On Syria and Palestine Dr Contenau also has much of value, and much that is new. His attributions are again cautious and acceptable.

It is inevitable that in a book of such wide scope there should be some mis-statements

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of fact and many doubtful points. These are commendably few and will in most cases be immediately corrected. We are very fortunate to have this work, now well on the way to completion, on our shelves.

SIDNEY SMITH.

FOUNDATIONS OF BIBLE HISTORY: Joshua, Judges. By JOHN GARSTANG.
Constable, 1931. pp. vii, 423, with 73 plates and 19 maps. 20s.

As Director, for seven years, of the British School of Archaeology in Jerusalem and the Department of Antiquities in Palestine, Prof. Garstang acquired an extensive first-hand knowledge of the ancient sites of the Holy Land and their topographical relations. It is not therefore surprising that he became fascinated with the old and still unsolved problems of the Israelite invasion and the subsequent settlement of the tribes in their new inheritance. The moment was opportune. Palestine today is receiving its full share of attention from archaeologists and explorers, and every year sees notable additions to our knowledge of its buried secrets. On the other hand it may fairly be asserted that the Higher Criticism's appraisal of the earliest documents of the Old Testament has reached a stage beyond which it is little likely to move. If any certainty is ever to be attained about the vexed questions of Israel's entry into Canaan, it must be by applying the test of fact, archaeological or topographical, to those narratives which have been adjudged by scholars to be the oldest and most reliable.

It is to this task that the author addresses himself, and though many of his conclusions are unlikely to commend themselves to that school of thought which still regards Merneptah (c. 1225 B.C.) as the 'Pharaoh of the Exodus' they certainly constitute a weighty challenge to that long-established theory. Prof. Garstang, in fact, believes that his excavations on the ancient sites of Ai (Et Tell), Hazor (El Kedah) and, more particularly, Jericho (Tell El Sultan) point to the destruction of these places at about 1400 B.C. But this, as he points out in an interesting study of the chronology preserved in Judges, accords well with the traditional date of the invasion of Canaan by Israel under Joshua. A similar conclusion appears to be reached by an examination of the other sites mentioned in the oldest strata of the Biblical narrative, while a careful investigation of the topographical details of Joshua's campaigns reveals an astonishing accuracy of description on the part of the ancient writers. There is, in short, plenty of evidence that they were by no means incapable of preserving a reliable tradition of their nation's earlier history. Given this reliability, however, certain important conclusions follow, and the author faces them without blenching. If the earlier dates of the Exodus and the Invasion are to be retained, the period of the Judges must coincide with the Egyptian domination of Palestine, of which no mention is made in the Bible at all! It may at first sight appear impossible to maintain such a position, but Prof. Garstang is prepared to demonstrate not merely that it is highly credible but that, in fact, the vicissitudes of Israel during this period are interpretable with singular consistency, in the light of the equally irregular vicissitudes of Egyptian rule between 1400 and 1100 B.C. Here again staunch upholders of the later dating will probably deny that he has made out an overwhelming case for his thesis. It is however quite indisputable that the 'coincidences' are strangely numerous and striking, and until or unless a more credible explanation of them is discovered, the theory advanced by Prof. Garstang must receive very careful and serious attention. Certainly it cannot be doubted that the illumination which is thereby thrown upon the old disjointed exploits of the Judges will secure for it many adherents.

Enough will have been said to indicate that we have here a work of first-rate

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importance which no student of the Bible can afford to ignore, and which, merely as a work of reference, will not soon be superseded. The book is excellently printed and indexed, well-provided with maps, and profusely illustrated with the author's photographs. For the benefit of the general reader the archaeological and topographical material has been separated from the historical survey and collected into an Appendix which, with its plans and bibliography, will be found indispensable by the more advanced student. There are several imaginative but striking black and white drawings by Miss G. Levy and Miss M. Ratcliffe which will help to excite the interest of a wider reading public.

W. J. PHYTHIAN-ADAMS.

WELTGESCHICHTE DER STEINZEIT.¹ By O. MENGHIN. Vienna: Anton Schroll and Co., 1931. pp. 648, with 7 maps and 1029 figures. 40 gold marks.

Some idea of the substance of the magnificent volume before us can be gathered from the fact that its composition took Professor Menghin of Vienna 10 years of intensive labour to complete, and that the works of no less than 610 authors are cited in the index. The great importance of the work lies in the fact that here for the first time the manifestations of stone age civilization are treated as an organic whole regardless of time or space. In analyzing each culture and fitting it into an organic system Menghin has created order out of chaos, while cutting at the root of previous systems of a more provincial order. Whether or not his system will find ultimate acceptance in all its details—and the wide gaps in the field of knowledge render this unlikely—it is certain to exert an important influence on the future development of the subject.

As a natural corollary of his method of treatment Menghin has been compelled to adopt a new terminology of universal application, in place of the time-honoured hash of French place-names provincial in both space and time. In the new terminology three major divisions are recognized, the old Lower and Middle Palaeolithic being grouped together as 'Protolithic', the Upper Palaeolithic and Mesolithic as 'Miolithic', the 'Neolithic' continuing as usual though now including the old Aeneolithic. The Eolithic industries are not admitted within the system as a group, though the Mesvinian is placed in the Protolithic blade industry. The East Anglian industries are dismissed on general grounds as probably natural, though the arguments used hardly seem to be valid in the case for instance of the Foxhall floor, which was found insulated in sand and associated with undivided bivalve shells. The real reason² for the rejection of these industries is the theoretical one that 'es nicht für wahrscheinlich, dass man solche auf europäischen Boden machen wird, sie sind viel eher im zentralen Asien zu erwarten'.³ Instead we are to be content with a pre-Protolithic wood culture, the occurrence or non-occurrence of which stands clear of objective proof.

The Protolithic is made to fall into three types of industry—blade, core and bone. The progress of research in recent years has compelled the recognition of blade (or at least of flake) industries contemporary in age with the familiar lower Palaeolithic core industries. The mass of evidence brought forward therefore by Prof. Menghin from Africa and Asia as well as from Europe only serves to underline what Breuil and others had already recognized. The obvious genetic relationship of the developed Mousterian to

¹ This is a book which should be translated into English, and we hope most earnestly that some publisher will undertake it.—EDITOR.

² There are of course many other reasons for rejecting them.—EDITOR.

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the earlier Clactonian, and Levalloisean flake industries accounts for the elimination of the familiar middle Palaeolithic as a separate period. In drawing attention to the less familiar Wildkirchli and Veldener cultures, and postulating a separate group of bone industries of Protolithic age, a new contribution has been made to the subject. As if to silence any doubts as to the industrial trinity of the Protolithic we are given a daring explanation which it must be confessed is very convincing. The three industrial traditions reflect different general modes of life; thus the blade industries indicate a culture dependent on daggers and lances, and adapted to life on the steppe, the core industries denote an axe and club culture adapted to tropical forests, and the bone industries an absence of flint and a highly nomadic life. If we consult the excellent map showing the zones of influence of the different traditions during the Protolithic we shall see for example that whereas the Mongolian steppes abound in blade industries, they are devoid of core industries, which on the other hand crowd the interglacial tropics; the bone tradition is found over northern Siberia with penetrations into eastern Europe, a region in which the extreme climatic fluctuations compel great seasonal migrations.

In the Miolithic the same three industrial traditions are traced for us. The blade industries are treated under no less than ten geographical zones, and include besides the upper Palaeolithic, cultures such as the Tardenoisian and Swiderian, which under the older terminology would have to be considered as early Mesolithic. The genetic relationship between the upper Palaeolithic and the earlier Mesolithic of the old terminology has in the past been especially stressed by Obermaier. In distinguishing the core tradition at least in the earlier stages of the Miolithic greater difficulties are encountered, though in Europe we have for instance the Ondratitzian, Predmostian, and Mezynian cultures. The developed Solutrean is held to belong to the blade group though showing influence from the core tradition. Mr Burkitt has in this connexion long ago claimed the laurel leaf as the product of contact between the two traditions of blade-and-burin and core industries, which explains the ubiquity and apparent spontaneity of its occurrence. The later core industries of the Miolithic include the familiar Campignian and Kitchen Midden of Europe and the early Tumba culture of West Africa. The system thus affords an explanation of the tranchet axe and pick in connecting it with the old Protolithic core tradition. An interesting typological link is the tranchet blow, which as a method of obtaining a sharp edge was frequently employed by the makers of Protolithic coups-de-poing. The bone industrial tradition once again is found wide-spread over northern Eurasia, and includes cultures usually assigned to the old Mesolithic, such as the Kunds and Maglemose cultures. The whole of the Mesolithic is thus finally engulfed in the later half of the Miolithic. We may perhaps be permitted some regret at the loss of a term which covered the embarrassment of a past generation of prehistorians, since locally at least the closing stages of the Miolithic with its climatic changes and altering modes of life do seem to require some terminological label of their own. That both the Protolithic and the Miolithic should reveal the same three industrial traditions, each with a similar distribution in both periods, cannot well be due to chance; it is suggested by the author that we are in fact dealing with continuous traditions. An unexplained transition is the very real one from the Protolithic flake to the blade-and-burin industries of the succeeding period.

Before passing on to review his treatment of the Neolithic we must point out Menghin's device for overcoming the difficulty involved in dealing with 'culture lags'. Under his system, which he calls 'Phaseological Chronology', all cultures grouped together belong to the same phase or major period; any culture in an outlying area which survives

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contemporaneously with the succeeding major phase is placed in its correct phaseological group with the chronological qualification 'epi'; while a culture surviving into the second succeeding stage is qualified by the term 'opsi'. Thus a culture grouped as Epiprotolithic is a true Protolithic culture surviving into Miolithic times, while an Opsiprotolithic culture is a similar culture surviving into Protoneolithic times. Thus the Tasmanian flake culture is designated Epi- or Opsiprotolithic, an indication both of its phaseological significance and of its chronological position. In his consideration of the absolute dating of the Miolithic, Menghin leans strongly on the side of a low rather than of a high dating.

Turning to the Neolithic, Menghin distinguishes a Protoneolithic, and a Mixoneolithic, in the latter of which the Neolithic arts found their full expression and metal was already in partial, though subordinate, use. The old Aeneolithic is dismissed as a mere phantom without any foundation on analysis. Taking the Protoneolithic we find once again a threefold division, this time based more directly on varying ways of life; thus we have groups of cultures based on the domestication respectively of swine, cattle, and beasts of burden. That based on swine is thought to have been cradled either in India or China, and reveals itself through the axe with round section (*walzenbeil*) in its western and mat pottery (*mattenkeramische*) in its eastern division. The typical axe in association with pigs' bones occurs for example in the upper strata of the Danish Kitchen Middens, and generally throughout western Europe, and North and West Africa; while the mat pottery complex is found chiefly in China, Indo-China, and northeast India. In Anau we have the culture of the cattle breeders who are thought to have been cradled in western Turkestan and whose lithic industry was based on the flake. Finally the folk who first domesticated beasts for transport, horses, camels, asses, etc. are thought to have dwelt in central Asia, though their existence is mainly presumed from the later Mixoneolithic steppe cultures. The three Protoneolithic culture-groups are claimed to maintain the industrial traditions respectively of the core, flake, and bone divisions traced throughout the Proto- and Miolithic.

Finally we are introduced to the Mixoneolithic which once more exhibits a threefold aspect, the cultures falling into three main groups: the village, the city, and the steppe. The village peasant cultures are thought of as the result of the fusion of swine and cattle rearing cultures, the primary cultures of the East arising as a direct result of the admixture, the secondary cultures of the West resulting partly from the diffusion of the primary village and partly from weak radiations from the city cultures; the village cultures of North Africa and the Eastern Mediterranean are regarded as intermediate. The city cultures, many of which contribute early to the pages of written history, are to be regarded generally as advanced editions of the village type of culture, though they are to be distinguished by the fact that they represent the fusion of elements from all three of the Protoneolithic culture-groups. Prof. Menghin would regard western Turkestan as the primary home of the city cultures, all others,³ including presumably the Nilotic, being regarded as secondary. The steppe cultures came into being when nomadic horse, camel, or ass breeders, took to cattle breeding and borrowed many of the arts of life from the village and city cultures, without however abandoning their traditional nomadic form of life.

In the formulation of the system just outlined many assumptions of a controversial kind are made with which we have not the space to deal. If we have any criticism to

* 'Alle übrige Stadtkultur ist sekundären Characters', p. 470.

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make, it is that the author has in several places tried to make altogether too much of cultural traits which are useful to his system; thus we feel somewhat shaken when on page 473 we read of the adventures of the spiral motive of the Danubian province, which spreading by the Aegæan and the ancient East, reaches China, Japan, Indo-China, finally to be born over Oceania by the Polynesians. The professor doubts the jump to America, but adds: 'Aber warum nicht, da doch auch der mexicanische Kalender aus Ostasien stammt?'.
 Ostasien stammt?'

The stimulating chapters in which the evidence of Ethnology, Philology and Physical Anthropology are related to Prehistory in general and Professor Menghin's scheme in particular can only be mentioned here. The reviewer confesses to a feeling however that the enduring part of the book is contained in the first 477 pages in which the new system is unfolded. The final chapter 'Universalgeschichtliche Zusammenfassung Und Kulturphilosophische Ausblicke' brings the work to a fitting Teutonic close. The multiple indices are excellent.

J. D. G. CLARK.

LO-LANG: a report on the excavation of Wang Hsü's tomb in the ancient Chinese colony in Korea. By YOSHITO HARADA, with the collaboration of KINGO TAZAWA. By order of the Faculty of Letters, Tokyo Imperial University. Tokyo: The Tokohoin, 1930. pp. 148 and 128 plates. Texts both in English and Japanese. \$17.50.

Ever since 1925 when the Faculty of Letters of the Tokyo Imperial University excavated the Lo-lang burial mounds of Korea, the archaeological world, as well as students of Chinese culture, has been waiting for the complete report. With the publication of this book the full significance of the investigation is realized. The tomb of the Chinese official, Wang Hsü, which is believed to be over two thousand years old, yielded besides human remains various utensils for food and drink, toilet articles, personal ornaments, silks, coins, mirrors, lacquer work of high quality, and above all a wooden seal of Wang Hsü, which serves to identify and date the tomb in a manner unprecedented in Oriental archaeology.

In the year 108 B.C. Wu Ti (156-87 B.C.) vanquished the Wei family of Korea and established four provinces, one of which was Lo-lang, a district in the vicinity of the present-day Seoul. Lo-lang thus became a Chinese dominion, and in spite of frequent changes the colony remained intact till the early part of the Tsin dynasty (A.D. 265-420). All the material civilization of China proper was introduced there and formed a cultural centre of the Han dynasty (205 B.C.—A.D. 221) in Korea.

The necropolis of Lo-lang, according to the investigations of the Government of Korea, has no less than 1386 burial mounds. Since 1909 there have been a series of excavations, each yielding a variety of new material. In 1925 one burial mound was found with three wooden sepulchral chambers. The main room had three wooden coffins. The chambers and coffins were in a perfect state of preservation, and the greater portion of the articles found retained their original form. The coffins are of a rectangular box-shape, lacquered inside and out. Some are decorated with paintings of birds in lacquer. In regard to the structure of the chamber and coffins, there is in the main very little difference between those found in Lo-lang and the Hun tombs in Outer Mongolia excavated by Kozlov. (See *Comptes rendus des expéditions pour l'exploration du nord de la Mongolie*, Leningrad, 1925).

The most significant part of the book is the section that deals with individual articles found in the sepulchral chamber. Utensils for food and drink, such as lacquered bowls,

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dishes and trays, pottery jars and cylindrical vessels, are numerous. An oval lacquered bowl with a handle on either side, one of which is missing, is red inside and black outside, and it has the incised inscription of 55 letters filled in with white. It was made in A.D. 45, in the reign of the Emperor Kuang Wu in the Later Han. There are three other dated lacquer wares, one dated A.D. 52 and two dated A.D. 69. Many articles bear two characters, made not by the lacquer artist but probably by the friends of the deceased, for two characters mean 'Good luck to Wang'. These articles are from the tomb of Wang Hsū.

Toilet articles and personal ornaments also are abundant. A toilet-box with four smaller boxes fitted inside is very much like the one shown in a scroll-painting attributed to Ku K'ai-chih of Tsin (A.D. 265-323) now in the British Museum. The small boxes contain a quantity of white powder, pulverized talc and native carbonate of lead, and a powder-brush. Wooden combs, tortoise-shell hairpins, bronze mirrors, and a pair of glass ear-ornaments throw much light on the life of women.

Lacquered shoes, silk cords, lozenge-patterned thin silk, a coral bead with carving of a ram, a set of divination boards with ten calendar signs, 12 signs of the zodiac, 28 stars, and a drawing of the eight trigrams, all pertaining to astronomy or direction, and a few jujube and other fruit-pips, are all very significant as they provide material that give clues to the manners and customs of peoples whose written records are not explicit. For example, it is often said that Taoism swayed the minds of the people in this period so much that the figures of Taoist divinities formed a favourite motif, but of this period we possess few concrete objects and had to be content with vague written statements. Now, however, the finds in these tombs reveal Taoist immortals represented on the decoration of common everyday lacquer wares. Or again, no one doubts that the art of divination permeated the mind of the ancient Chinese, but we had little idea of the actual method. Now the disc and the square pieces found in the tomb lead us to imagine that the disc was held by a pin on the boards and revolved when in use. A carved design of a ram and a comb decorated with Scythian designs, resubstantiate the relations which existed between Hun and Scythian cultures, and a girdle ornament of gold shows Sarmatian technique. Glass ear-ornaments in the tomb indicate Roman influence. Indeed all that the written records tell of the cultural contacts between the Occident and the Orient is conclusively proved by these discoveries.

The book is most beautifully illustrated with photographs, many of the actual size and in colours.

SHIO SAKANISHI.

HANDBUCH DES DRUIDEN ORDENS. Von HUGO WIESE und H. FRICKH. Dritte Auflage 1931. Von HUGO WIESE, G. ADOLF STOLL und DR. KARL ROEDER. München: Carl Geber. pp. 295, with 11 plates. 5 marks.

To all who are interested in Modern Druidism this is a very valuable book. The first part contains what may be called the basis of the articles of faith of the Druid Orders and more especially that of the German branch. All these societies and especially the parent, the English A.O.D., still cling somewhat tenaciously to the eighteenth century ideas on Druidism with the result that they profess far more than is warranted by modern knowledge. Despite careful and cautious compilation the existence of the old leaven still betrays itself.

The second half of the book is of very real historical value; all the available material for a history of the origin of all the Druid Orders throughout the world has been carefully collected and the result is a reliable book of reference on the subject.

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The Ancient Order of Druids was founded in 1781 by a man of the name of Hurle and his personal friends. Who he was is not positively known but the writer, after several years of research, is of opinion that he was probably one Henry Hurle, a carpenter and builder, who set up business on Garlick Hill in the City of London in 1769 and who, for 13 years before his death in 1795 sat on the Court of Common Council for the Ward of Vintry.

The original idea was a 'Secret Society' to which only personally recommended persons could be admitted and from which all religious and political discussions were sternly excluded. The founder probably owed his inspiration to the writings of Dr Stukeley. At first the A.O.D. was not a Benefit Society, though the giving of a helping hand to brethren in distress was one of its tenets. In 1833 a split occurred in the Order on this question and a large body of the members seceded to form a definite Benefit Society with the title 'United Ancient Order of Druids' and all the daughter societies throughout the world are now constituted on this basis. The parent society continues to flourish more or less on the old lines but has developed a voluntary Benevolent fund and engaged in other kindred activities.

The Druid societies in the United States, Australia and Germany are large and flourishing organizations as is also the English U.A.O.D. All have an initiation ritual based more or less on that of the parent Society drawn up by Hurle and in this sense are 'Secret Societies'.

To those seeking historical information this book is indispensable and is indeed the only one in which it can be found set out in full.

W. NORTH.

DOLMEN NECROPOLIS NEAR KERAZEH, GALILEE: Excavations of the British School of Archaeology in Jerusalem, 1930. By F. TURVILLE PETRE. *P.E.F. Quarterly*, July 1931, 155-166, with 5 plates.

This is a very inadequate account of the examination of no less than 24 dolmens. It is evident that the work described was carried out carelessly and unscientifically.

The writer gives no dimensions at all for the 'tumulus' which in some cases covered the dolmen—the said tumuli being apparently cairns, to judge from the photographs. He also mentions casually in his summary (p. 162) that some of the tumuli seem to be built up in 'concentric terraces' but he is quite silent on this matter in his detailed descriptions of each monument. Instead, superfluous details of dimensions are given—or details which should have been superfluous if any of the plans or sections had had a scale attached to them. Incidentally, these plans and sections, bad as they are, are unnecessarily made worse by the adoption of a different convention in each for indicating stones shown in section.

Is it a fact that nobody used flint in Palestine after the Bronze Age? If not, why not? Nothing is said about any but Roman pottery. Is this because none other was found, or because that was the only pottery the excavator could recognize? There are no drawings or other illustrations of potsherds but the illustrations of the other objects published are quite good—as photographs.

On p. 161 the plans and sections cannot be made to agree with each other. On p. 163 (line 8) he refers to 'the entire absence of burial remains', but he also refers to fragments of bone—'calcinated' (p. 161 last line), 'split' (p. 160, bottom), 'fragments' (p. 158). Were these human or animal? If merely animal, why not say so?

These criticisms are not made without reason. For instance the omission of any

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account of the 'terraces' referred to already is regretted because there are traces of the same feature above at least one of the Arles 'grottes' (see *Archaeologia* LXXVI, p. 158).

It is all horribly reminiscent of the bad old times, when dolmens were hogged, 'British pottery' was dismissed with that label, and minute and unnecessary details were given of capstones. We can do better than this nowadays in England, as the excavations of Capel Garmon, Bryn Celli-ddu and Belas Knap have shown. Surely the Government of Palestine can see to it that the monuments in its charge (as these presumably are) are not ravaged like this under the auspices of the British School?

ON AN ADOLESCENT SKULL OF SINANTHROPUS PEKINENSIS in comparison with an adult skull of the same species and with other hominid skulls, recent and fossil. By DAVIDSON BLACK. *Palaeontologica Sinica*, series D, vol. VII, fascicle II. *Peiping (Peking)*, 1931. pp. 114 and 16 plates. Price not stated.

In this extremely attractive and beautifully illustrated volume Dr Black has given us a definitive account of the young Peking skull which he has labelled 'locus 1 specimen'. With that care and enthusiasm which has been characteristic of all his work the author has given us from time to time interim reports showing the progress of his studies, and he must be heartily congratulated both with the way in which he has kept the scientific world in touch with what he has been doing and for the speed combined with the thoroughness with which he has now produced a report which is final, except for a study of the endocranial cast.

The present report is highly technical. It is in a very real sense complete. Unlike many anthropologists who are content with vague measurements or with a loose description of their technique, Dr Black describes in detail all his work, and he does not hesitate to use more than one method if several are current, in order to facilitate accurate comparison. A careful examination of the report leaves the reader in no doubt that all the data needed, unless we entirely alter our anthropological methods, have been tabulated here. The title, however, is one which may well make bibliographers tear their hair. We frequently have to consult books like this one, and we want to know where to look in our libraries. On the heading of this review the title has been given; what it will become in the hands of those who have to make bibliographical card indices the future will show, but it seems that, when one does go into a library to consult this monograph, the chances of getting it—and not one of its companions—first shot are somewhat remote. Further, be it noted, only a part of the title page has been printed above; there is a great deal more, and such essential things as the price are not stated. Secondly, though one cannot but admire the skilful thoroughness of the report, there is an omission which will be deplored by most readers of *ANTIQUITY*. The data are absolutely essential for a small body of technical persons. But all who are interested in the ancient history of Man want to know Dr Black's own views on his own remarkable discovery. No one else has, or is ever likely to have, quite the same opportunities for knowing all about the skull; the laborious process of digging a specimen out of its matrix gives an intimacy with the specimen which cannot otherwise be acquired. We are more than interested in what others may have to say about the specimen, and Dr Black is no doubt hampered by the absence of libraries etc. in Peking, but for all that we want to know what he thinks about the specimen. He very justly states that as much material is yet undescribed, the time for speculation has not yet come. But surely it is not speculation we want but, in addition to the technical details, such general

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conclusions, and possibly such a non-technical description, as the keen amateur or the student can read and understand. Dr Black tells us, in his all too brief summary that 'the data . . . demonstrate beyond reasonable question that in the *Sinanthropus* specimens a type is represented differing profoundly from any of those represented by the Neanderthaloid, Rhodesian, modern hominid or anthropoid types'. It could have been wished that Dr Black had expanded this statement into as many pages or more than he has paragraphs. The Peking finds are really important. Here we have no chance single discovery but a series, exactly dated and numerous. They belong to a unique species, and the find itself, in its completeness, is unique. The technical reader will be profoundly grateful to Dr Black for his careful, accurate and complete exposition. The non-technical may regret that after catering for the professional the author has not seen fit to use that vivid and direct descriptive style which he can use, but refuses to.

L. H. DUDLEY BUXTON.

L'OLOGÈNE NOUVELLE THÉORIE DE L'ÉVOLUTION ET DE LA
DISTRIBUTION GÉOGRAPHIQUE DES ÊTRES VIVANTS. By DANIEL
ROSA. Paris, Félix Alcan, 1931. pp. xii, 368. 35 francs.

The general theory expounded by the author in this volume that evolution proceeds usually is by way of dichotomy. The author does not believe that it is in any sense determined by changes in external conditions; nor does he think that a difference in external factors can be held responsible for any internal variations. Rather he holds that evolution is practically what may be described as a predetermined course in a group, not individuals, which follows as a matter of course when internal conditions have arrived at a suitable stage; much it would appear, if one may use an impossible analogy, as if a rock balanced evenly on a high place, immovable by wind or processes or decay, could grow unevenly until in the process of time it would inevitably tumble over. The author believes that differences in the fauna of different countries can be accounted for by comparing the dates of their emergence from the sea. Though doubtless much of the author's theories may not be accepted with approval by all, the problem is one of perennial interest, and his exposition, which is largely of a philosophical nature, is clear, logical and easily understood. The occasion of the publication in French is the veteran Italian scientist's 70th birthday, and all will welcome this clear and philosophical statement of his theories in a language which is more familiar to most Englishmen than the author's native Italian.

L. H. DUDLEY BUXTON.

A MAP OF XVII CENTURY ENGLAND, with Description, Chronological Tables,
and a Map of London, circa 1660. Scale: 16 miles to one inch. Published by the
Ordnance Survey, Southampton. 6s., mounted.

The Ordnance Survey has now issued a map of xviith century England. This necessarily differs materially from its precursor, the map of Roman Britain, and from its promised successor, Saxon England, because much research remains necessary before anything approaching a complete map of England in Roman or Saxon times can be produced. This does not apply to the map now under review, since it relates to a period much nearer to our own times for which not only contemporary maps, but a very material body of records are available.

It is in pursuit of a very natural inclination that one compares the maps of Roman

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and xviii century England in order to ascertain what changes some sixteen hundred years had wrought. One is struck by the extensive disafforestation which had already taken place by Caroline times. (Why has Windsor Forest been omitted? In 1607 it was over seventy miles in circumference). A second prominent feature is the draining of the East Anglian Fens.

Mining areas continued to be in much the same localities as they were in Roman times, except for some development of the iron ore wealth of the northern shires. Sheep rearing and cloth making were still, as in Tudor times, the most widespread occupations of the people, and here we have an interesting sidelight on the Civil War. The majority of movements of large bodies of troops was made through sheep country, where the flocks were a ready means of ration for those in charge of commissariat arrangements. It is recorded that Essex, on his march towards London after the relief of Gloucester, seized one thousand sheep between Cirencester and Cricklade from 'malignants and papists'.

This brings us to roads. These are stated to be based on John Ogilby's Survey of 1675, and it is probably in this respect that the map, if subsequent editions are issued, needs revision, since in its present form it is doubtful whether it gives an accurate representation of the main roads of the xviii century. The period depicted is one during which there were numerous movements of military columns, and it is a well-established fact that any movement of a large body of troops must be based on main roads, especially if the object of a march is to cover a considerable distance. The Irmyn Way from Gloucester to Speen and Newbury must have been a main road in the xviii century since by means of it Essex hoped to reach London after the relief of Gloucester, and he followed it as far as Aldbourne Chase where he was diverted to Hungerford as a result of an attack by Rupert's cavalry. Nevertheless, the Irmyn Way is omitted from the map, and so is the Fosse Way.

It is recorded that the Parliamentary troops, intended for the relief of Gloucester, marched from London by way of Bicester, Chipping Norton, and Stow on the Wold (presumably by the old Ferdestraete—army way), yet the map omits Bicester. If this town, which dates back at least to Domesday and which was famous for its fair has been left out, Banbury has been duly recorded as it deserves to be, if only for the old print which depicts a Cavalier watching the hanging of a cat by Puritans. Underneath is a legend which runs somewhat as follows:

To Banbury came I, O profane one,
And found them hanging of a cat on Monday
For killing of a mouse on Sunday.

There is one more criticism which applies both to this map and to that of Roman Britain. A more prominent type might advantageously have been used for words used to show the distribution of industry.

The xviii century map is prefaced by an excellent and concise account of the face of Stuart England by Professor G. M. Trevelyan; by an Outline of the Civil War; and by a useful chronological table of events and persons. In addition, it contains what will probably be of equal interest to the map, a plan of London about 1660, compiled from contemporary sources. This will enable the Pepysian to follow the diarist, in imagination, from Sayes Court to Whitehall, and the student of social history to ponder on London's development.

L. E. W. O. FULLBROOK-LEGGATT.

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CHURCHES AT JERASH. By J. W. CROWFOOT. A preliminary report of the joint Yale-British School expeditions to Jerash 1928-30. *British School of Archaeology in Jerusalem*, 1931. Supplementary Papers, 3. pp. 48 with 13 plates and 5 plans. 5s.

This preliminary report anticipates the full publication of results which is to be expected when the present excavations of classical buildings at Jerash are completed. It is indeed a revelation of the extraordinary wealth of material awaiting the excavator of early Christian antiquities in Syria. The often remarkable survivals of such buildings above ground have long attracted attention and the monumental surveys of Vogüé and Butler have made these survivals known to the world. Little investigation however, save in the neighbourhood of Jerusalem, has been possible until the years succeeding the War and these researches are amongst the first fruits of excavation devoted to this particular period. As the author observes they show how vastly superior were the structure and fittings of the town-churches of Syria over those less important structures which remoteness or chance have suffered, in whole or in part, to survive above ground.

Jerash, formerly one of the cities of the Decapolis and now represented by a Circassian village founded in 1878 in Transjordan, appears little in history. The ten important churches excavated are nearly all exactly dated by inscriptions and range from the middle of the 4th to the beginning of the 7th century. Their planning shows an extraordinary diversity and includes one fully developed cruciform building which, in the present state of our knowledge, forms a landmark in the development of the church-plan. The ritual-arrangements and fittings are even more remarkable and we have here revealed, in example after example, the disposition of the chancel screen and ambo and large stretches of the mosaic pavements laid down when the churches were built. These pavements themselves are remarkable for a delicacy of colouring and a florid richness of design which is quite unexpected. Altogether we must congratulate the combined expeditions and Mr Crowfoot, the director, on the rich harvest of their labours and the addition, in so short a time, of so great an increase in our knowledge of early Christian art. Mr Crowfoot has supplied a clear and succinct account of the individual churches, together with an excellent summary of their relative architectural and artistic importance. The report is illustrated by a series of admirable plans and photographs and two coloured reproductions of mosaics.

A. W. CLAPHAM.

GREECE AND ROME. Edited by the Rev. C. J. ELLINGHAM, M.A., City of London School, and A. G. RUSSELL, M.A., St. Olave's School, London. Published in February, June and October for the Classical Association by the Clarendon Press, Oxford. Annual subscription (for three numbers) 7s. 6d. post free, single copies 3s. Vol. 1, no. 1, October 1931. 64 pages, 5 plates. Size 9½" × 6½".

We print full details above of this attractive new journal, so that those who wish to purchase it may have no difficulty in making up their minds. It is primarily intended for teachers and 'has no intention of rivalling [those] grave and reverend seniors' the *Classical Quarterly*, *Classical Review* and the *Journals of Hellenic and of Roman Studies*. We do not think the promoters need have any misgivings on this point. 'Papers definitely devoted to original research will be excluded and dealt with, as hitherto, by the existing Journal of the Association'. The new journal will therefore, we imagine, occupy the same position in relation to the older ones that *History* does to the *English*

ANTIQUITY

Historical Review. That there is room for such a journal, the success of *History* has proved. We wish *Greece and Rome* long life and prosperity.

The present number begins with a foreword by Mr Cyril Bailey, and contains eight short and readable articles. Two are of the 'holiday haunts' type, which is what readers will expect to find here. By far the best is one, described by Mr Bailey as 'provocative', on New Valuations in Greek Art. We cannot share Mr Barton's preference for archaic sculpture, but we like his style and method of approach. It is absolutely right to admire 'the new unity of beauty and purposefulness in such creations as the *Europa* or a Daimler car—both of which a Greek would have admired to the point of rapture'—provided of course he were not a ship's cook or pedestrian. These things—and the latest aeroplanes might be included—represent the best creative work of the day, apart from some architecture which is still rather crude and archaic. But we feel less enthusiasm for the *archaistic*, not archaic, marble pigeon of Csaky and similar aberrations; being mindful of the aphorism that 'genuine art is always produced for current use'. On p. 19 there are some wise sayings which we should like to quote, relating to communal as contrasted with individual art. So long as *Greece and Rome* continues to provoke us with such lively sallies, the Editors can face the future and the rising generation with confidence.

Since this is an Oxford-and-Milford production, it goes without saying that it is well produced. We admire the cover nearly as much as we admire our own. We cannot, however, refrain from reminding the readers of ANTIQUITY that they get, in mere bulk, far more for their money than the readers of this and other journals. Assuming that the number of pages and plates in the first number of *Greece and Rome* is to be maintained in future issues, we find that for 7s 6d a year readers will get about 25,000 words and 15 plates. Readers of ANTIQUITY, for 20s a year get about 254,000 words and 90 plates. Reduced to a common measure of cost to the buyer, this means that we print 3.4 times as many words and 5.8 times as many plates in a year for the same money. We mention these facts, not at all to depreciate the new journal, but merely to show, what is often overlooked, that our method of production has advantages which the subscriber is apt to forget when he is asked for his subscription!

THE DOLPHIN IN THE LITERATURE AND ART OF GREECE AND ROME.

By EUNICE BURR STEBBINS. *Menasha, Wisconsin: The George Banta Publishing Company, 1929. pp.135. Cloth, 10s 6d., paper, 6s 6d.*

The writer of this dissertation was educated partly in Germany, where she seems to have learned thoroughness in the collection of *Fachliteratur*. The dolphin is considered zoologically (ancient and modern); his appearance in art from the Minoan period downwards is discussed and typologically classified (it is a pity that not even a few typical illustrations could be provided); his literary vogue is summarized. The writer makes it clear that the dolphin of antiquity is *Delphinus delphis*, the cetacean, not the sailor's miscalled 'dolphin', the fish *Coryphaena*, with which Mr Norman Douglas in his delightful book on the birds and beasts of the Greek anthology seems to confuse it. (I wonder whether the writer of this thesis has made the acquaintance of Mr Douglas' work?) That the epithet *orqub* refers to the dolphin's forehead and not his snout seems to be supported by its application to kids; it is used also, of course, of bees. In riding on the dolphin's back to a doctorate, the writer has given us what is presumably the most complete Delphinology in existence.

W. L. CUTTLE.

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